ABIS Family

More than just a powerful biometric engine

ABIS

INNOVATRICS

2004

2007

Core

Matching Cluster

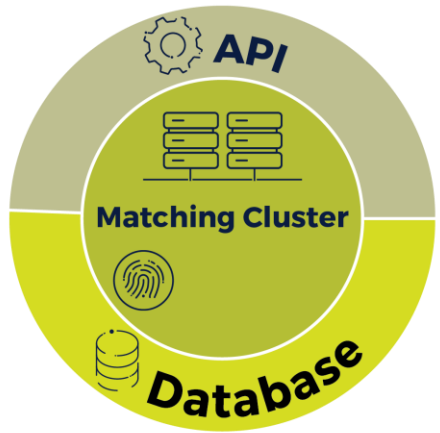
2009

Core

Matching Cluster

Database

API



ABIS

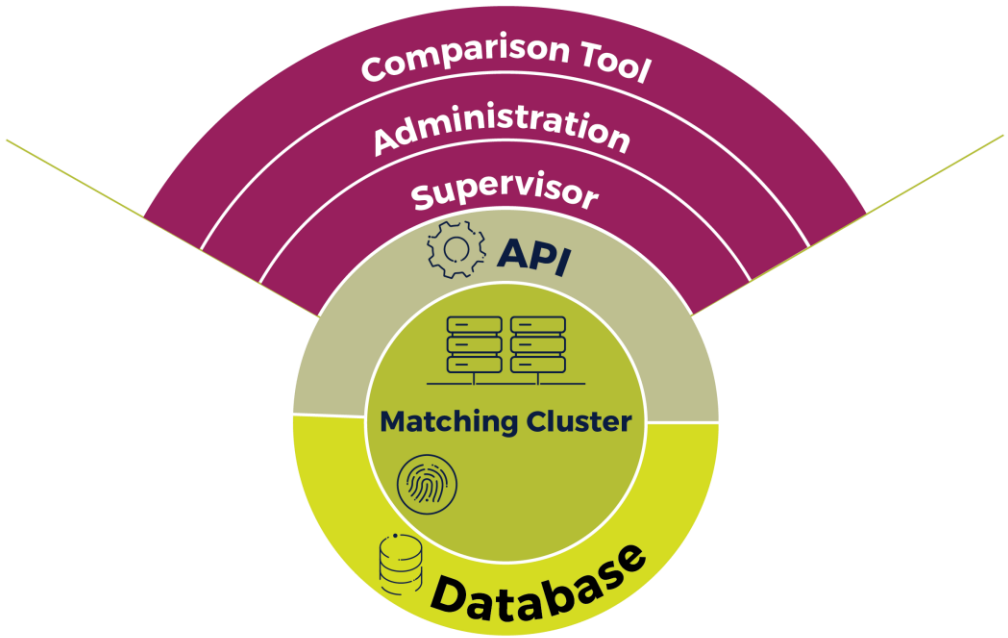
2012

Core

Matching Cluster

Database

API



ABIS Portal

Supervisor

Administration

Comparison tool

ABIS

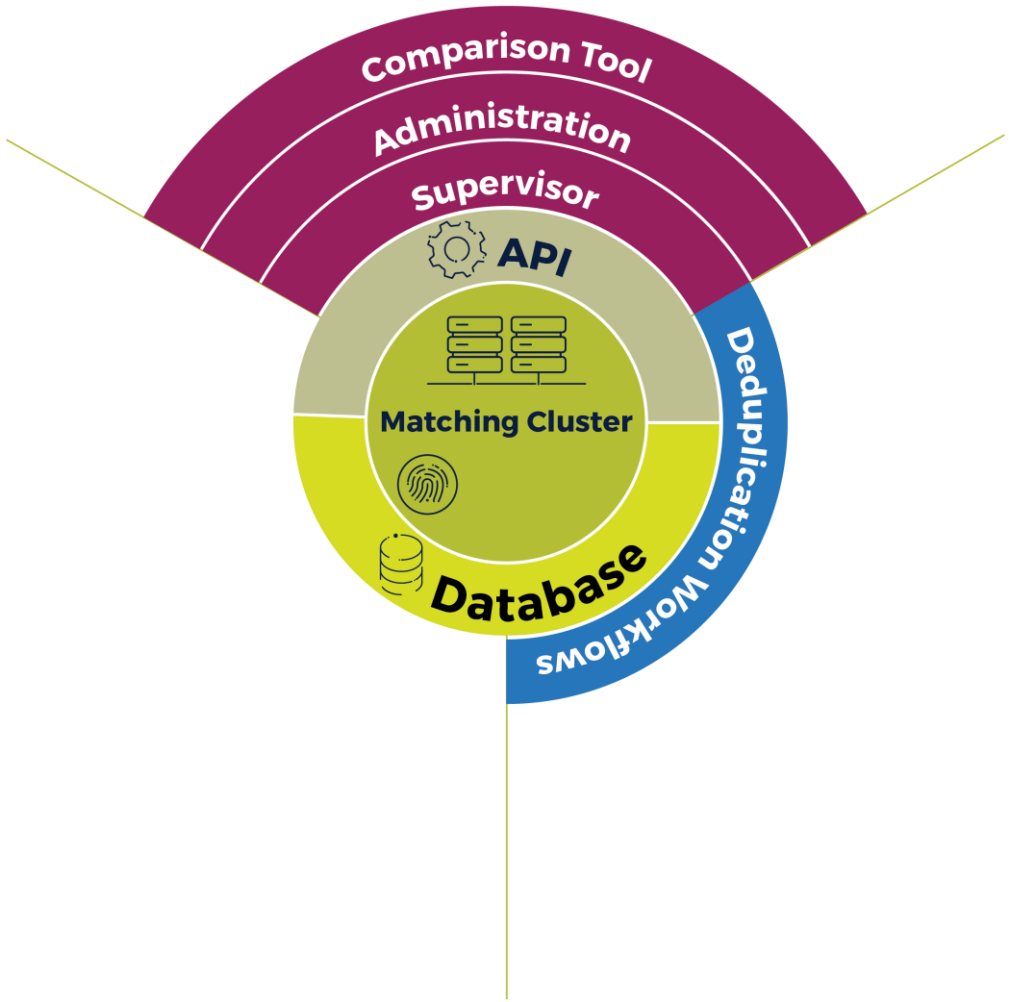
2015

Core

Matching Cluster

Database

API



ABIS Portal

Supervisor

Administration

Comparison tool

Civil Identification

Deduplication Workflows

ABIS

2017

Core

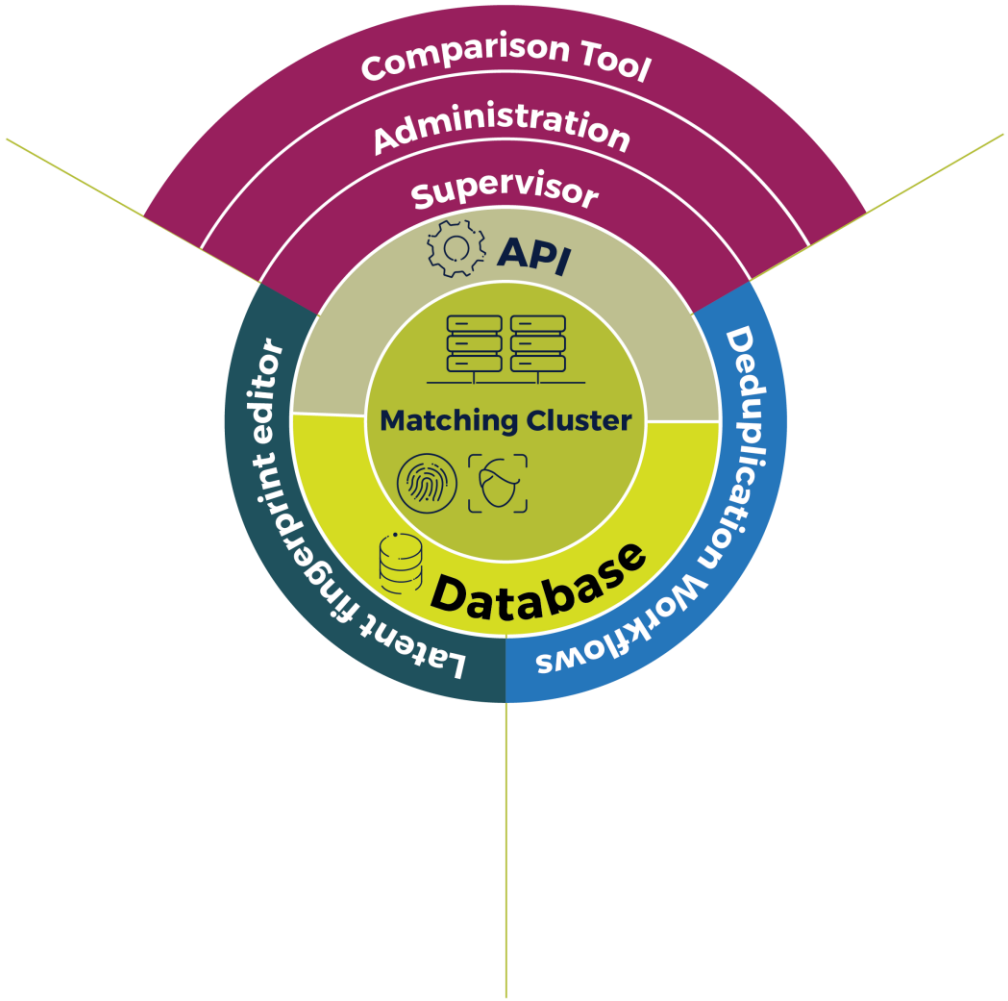
Matching Cluster

Database

API

Criminal Investigation

Latent Fingerprint Editor



ABIS Portal

Supervisor

Administration

Comparison tool

Civil Identification

Deduplication Workflows

ABIS

2018

Core

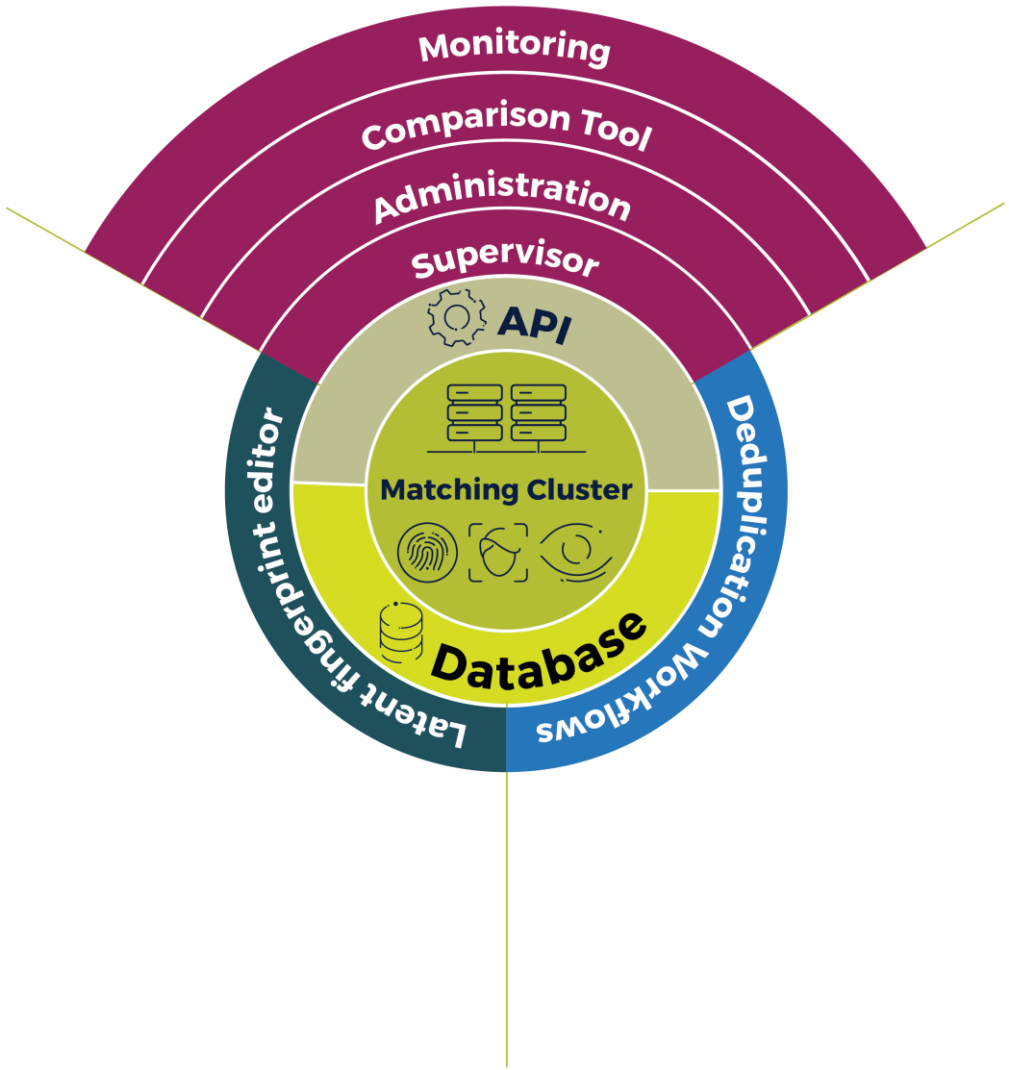
Matching Cluster

Database

API

Criminal Investigation

Latent Fingerprint Editor



ABIS Portal

Supervisor

Administration

Comparison tool

Monitoring

Civil Identification

Deduplication Workflows

ABIS

2019

Core

Matching Cluster

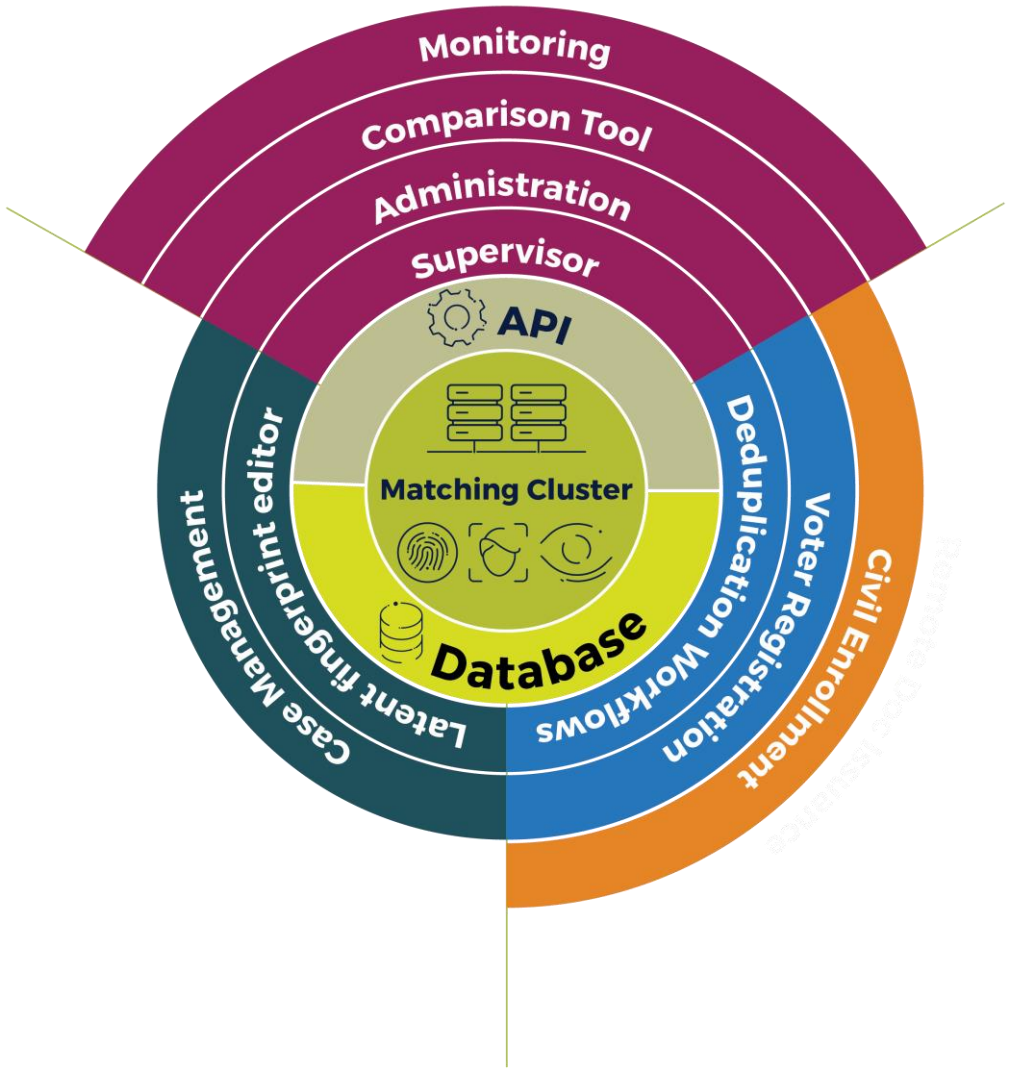
Database

API

Criminal Investigation

Latent Fingerprint Editor

Case Management



ABIS Portal

Supervisor

Administration

Comparison tool

Monitoring

Civil Identification

Deduplication Workflows

Voter Registration

Civil Enrollment

ABIS

2020

Core

Matching Cluster

Database

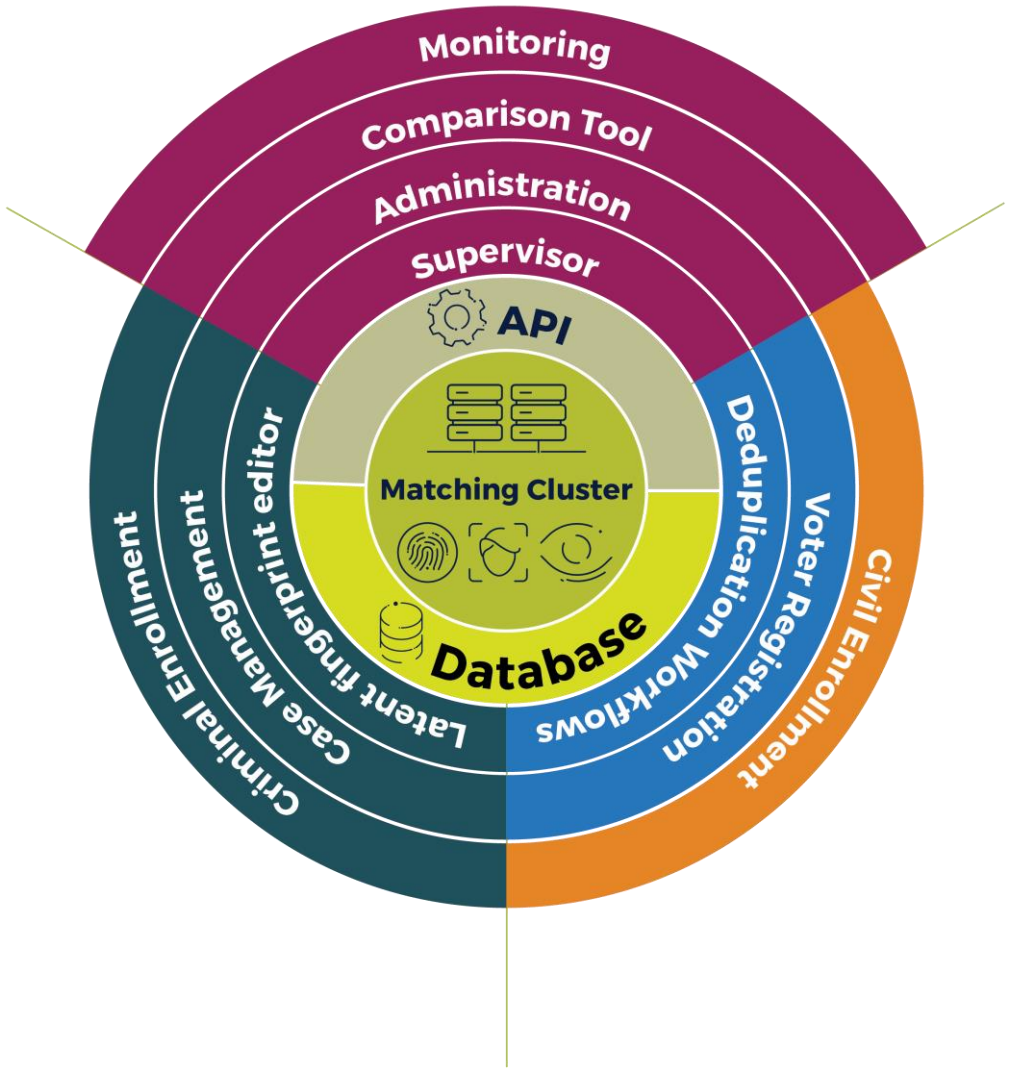
API

Criminal Investigation

Latent Fingerprint Editor

Case Management

Criminal Enrollment



ABIS Portal

Supervisor

Administration

Comparison tool

Monitoring

Civil Identification

Deduplication Workflows

Voter Registration

Civil Enrollment

ABIS

2021

Core

Matching Cluster

Database

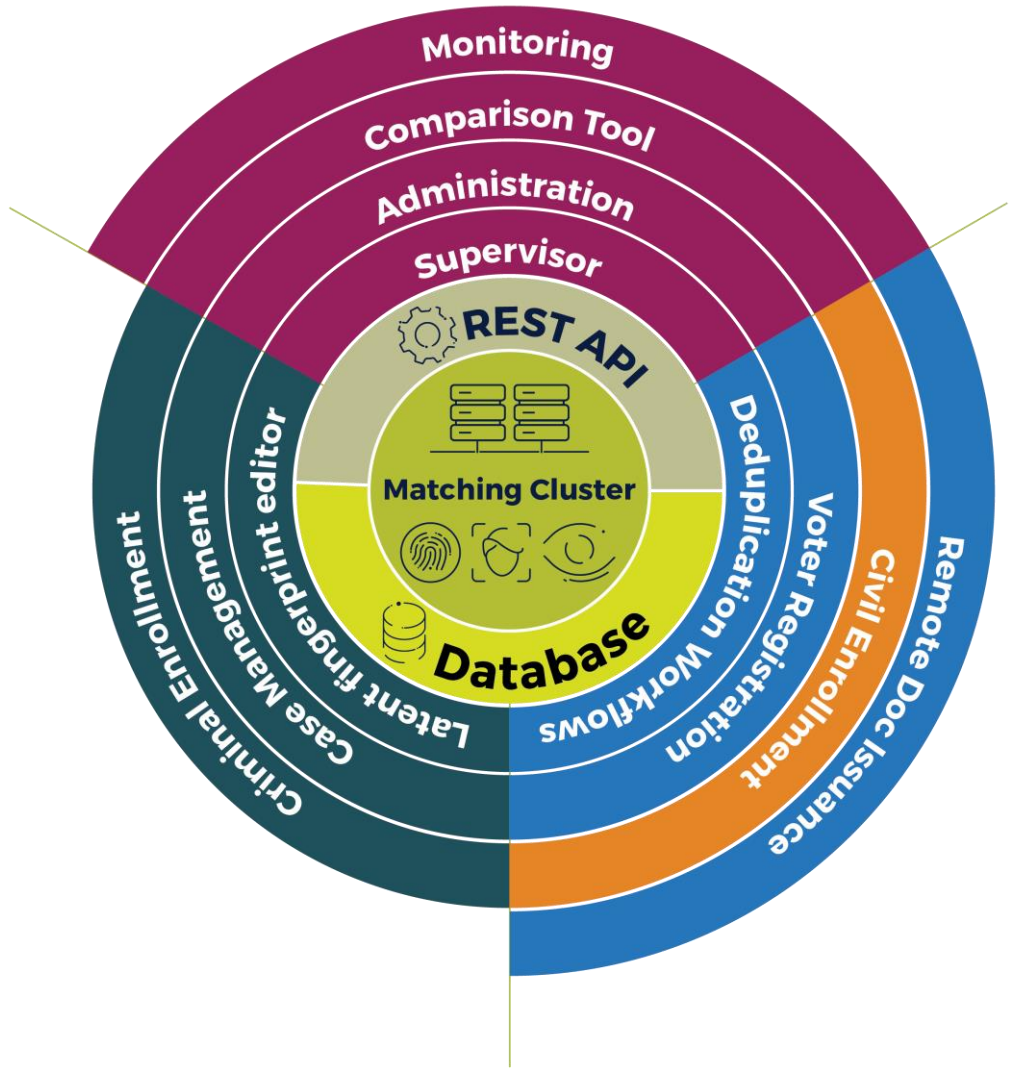
REST API

Criminal Investigation

Latent Fingerprint Editor

Case Management

Criminal Enrollment



ABIS Portal

Supervisor

Administration

Comparison tool

Monitoring

Civil Identification

Deduplication Workflows

Voter Registration

Civil Enrollment

Remote Doc Issuance

ABIS

2022

Core

Matching Cluster

Database

REST API

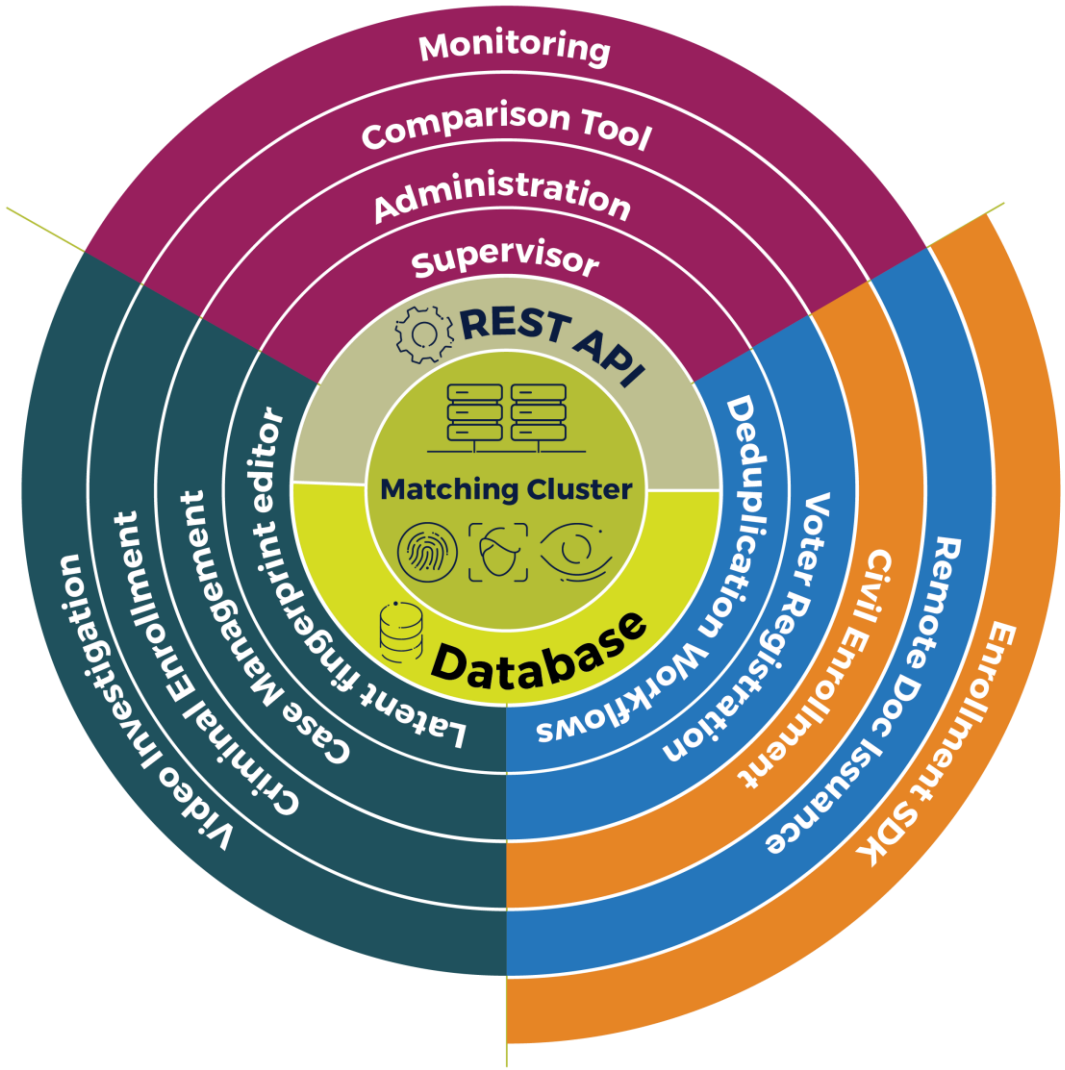
Criminal Investigation

Latent Fingerprint Editor

Case Management

Criminal Enrollment

Video Investigation



ABIS Portal

Supervisor

Administration

Comparison tool

Monitoring

Civil Identification

Deduplication Workflows

Voter Registration

Civil Enrollment

Remote Doc Issuance

Enrollment SDK

ABIS

ABIS Family

Core

Matching Cluster

Database

REST API

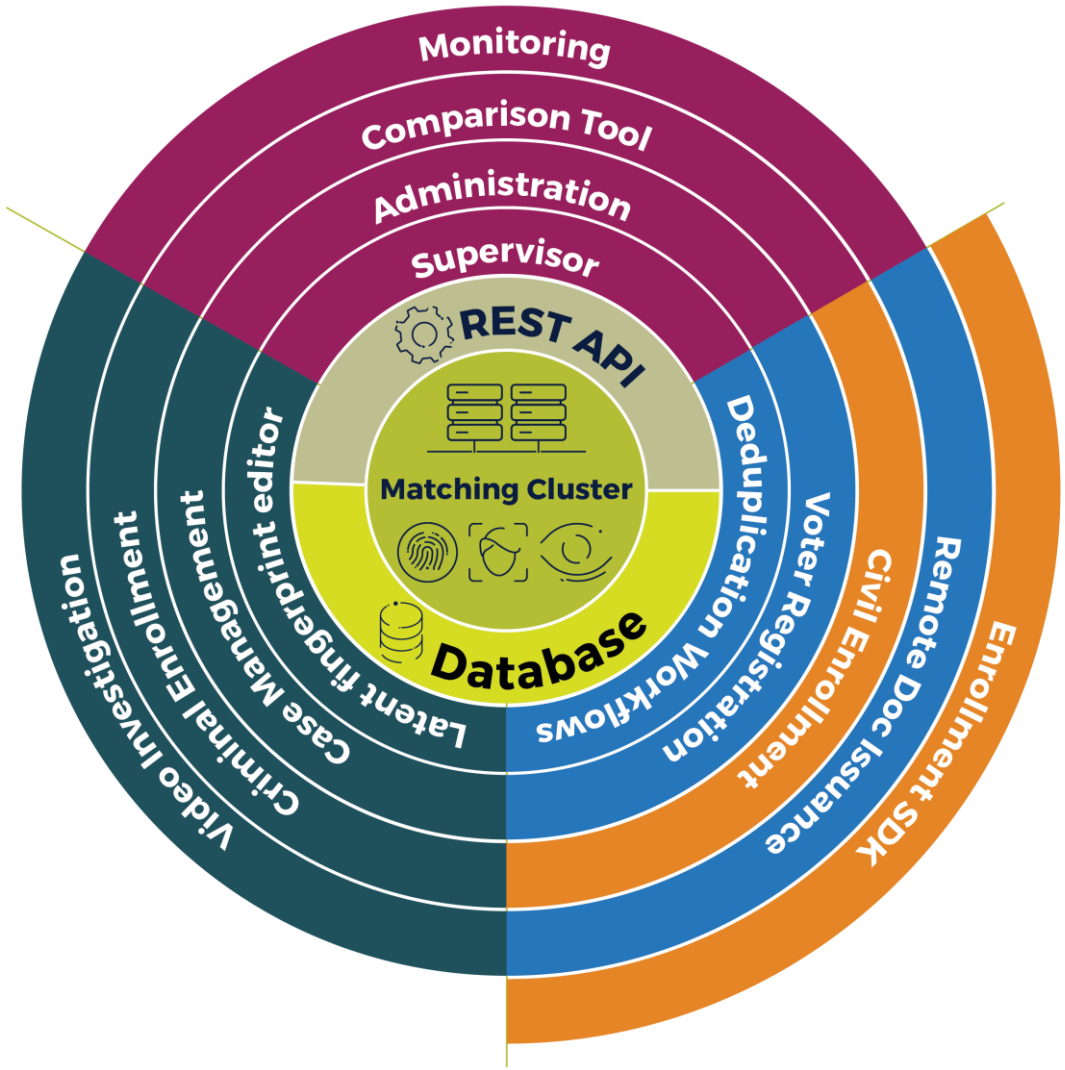
Criminal Investigation

Latent Fingerprint Editor

Case Management

Criminal Enrollment

Video Investigation



ABIS Portal

Supervisor

Administration

Comparison tool

Monitoring

Civil Identification

Deduplication Workflows

Voter Registration

Civil Enrollment

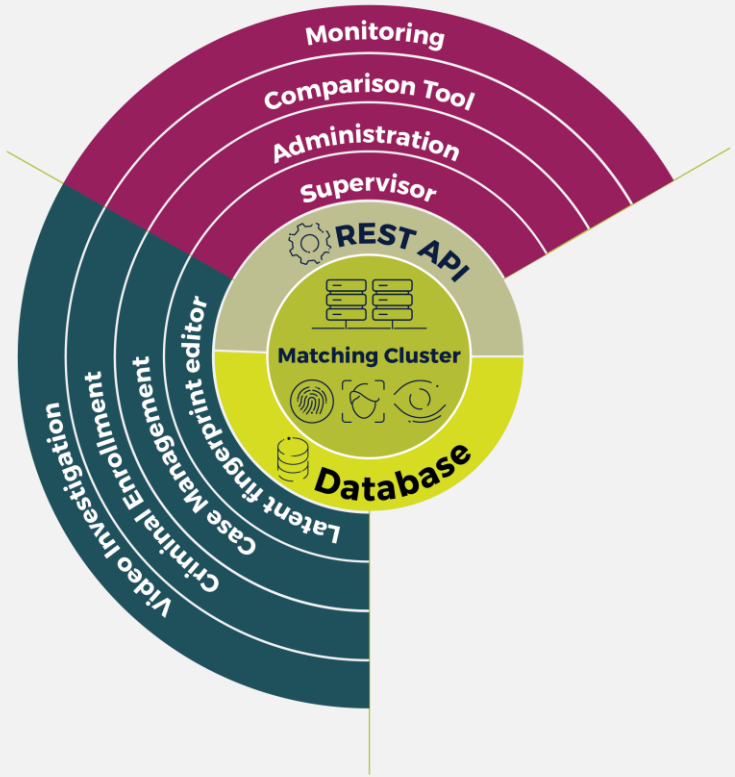
Remote Doc Issuance

Enrollment SDK

ABIS

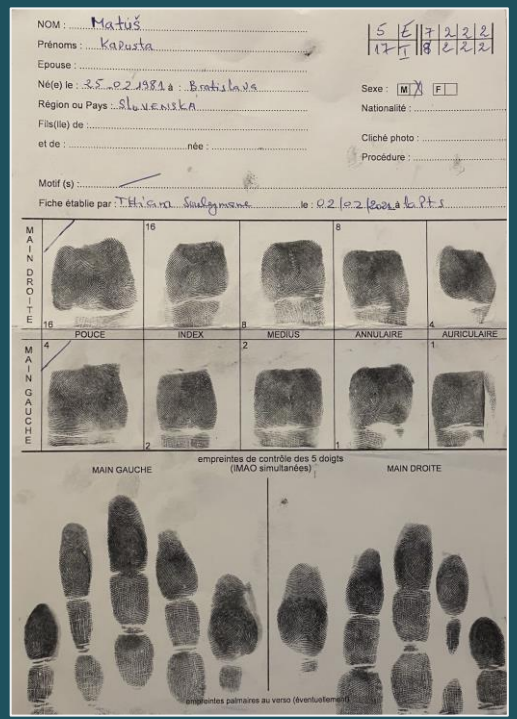
ABIS for Criminal Investigation

- Latent Fingerprint Editor
- Case Management
- Criminal Enrollment
- Video Investigation



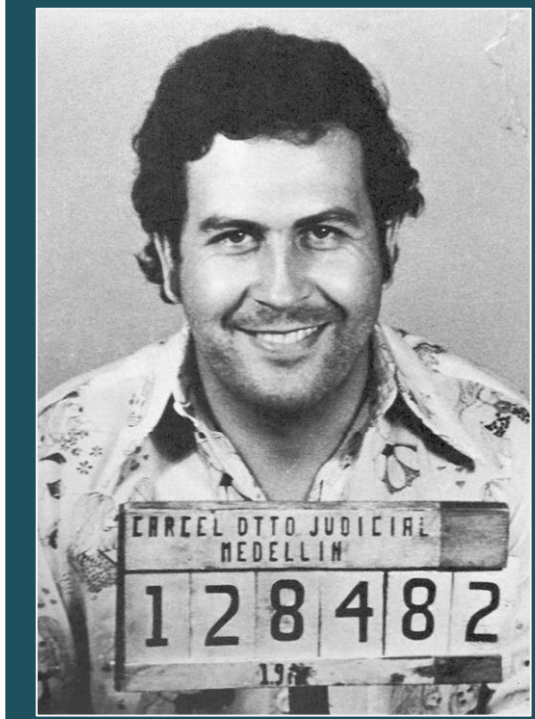
Enrollment of Criminal Suspects

Fingerprint card scanning



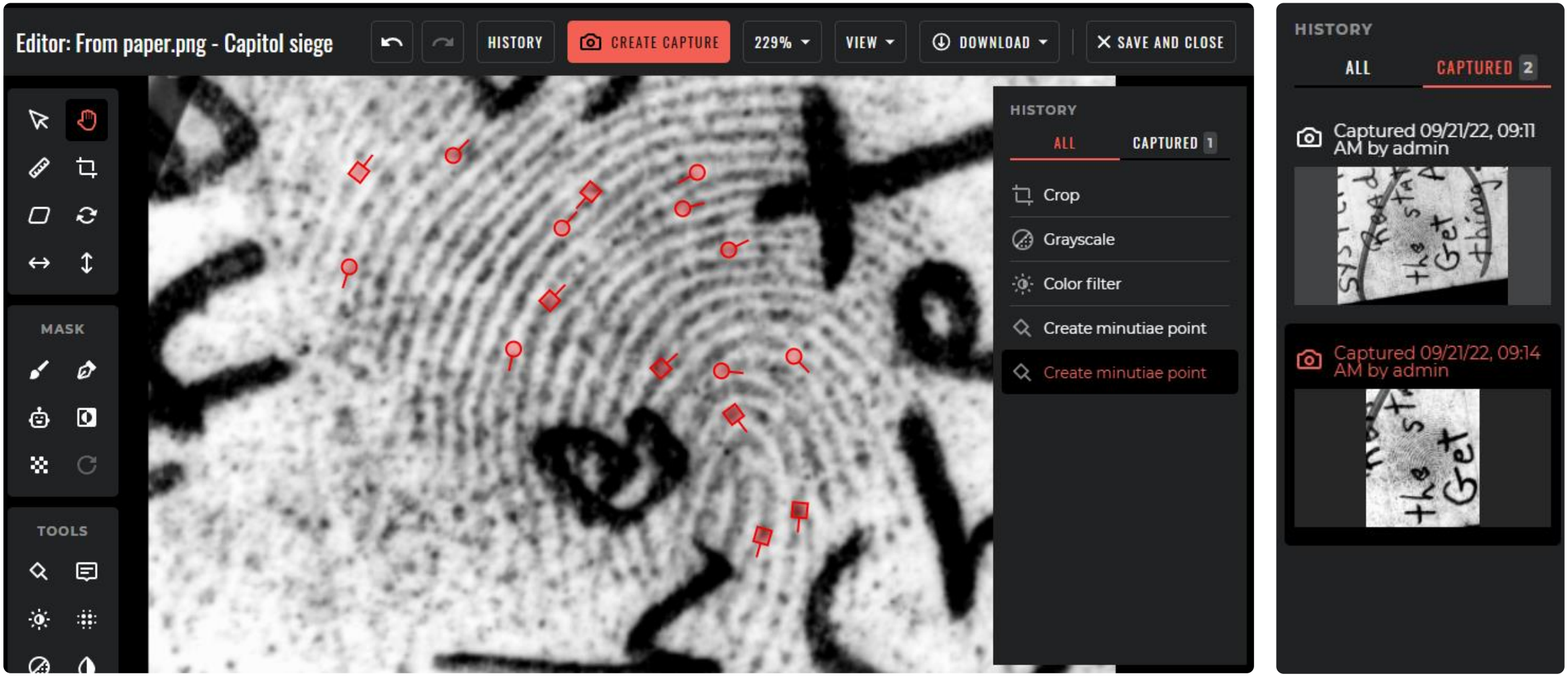
Live palm & rolled print enrollment

Mugshots and profile photos

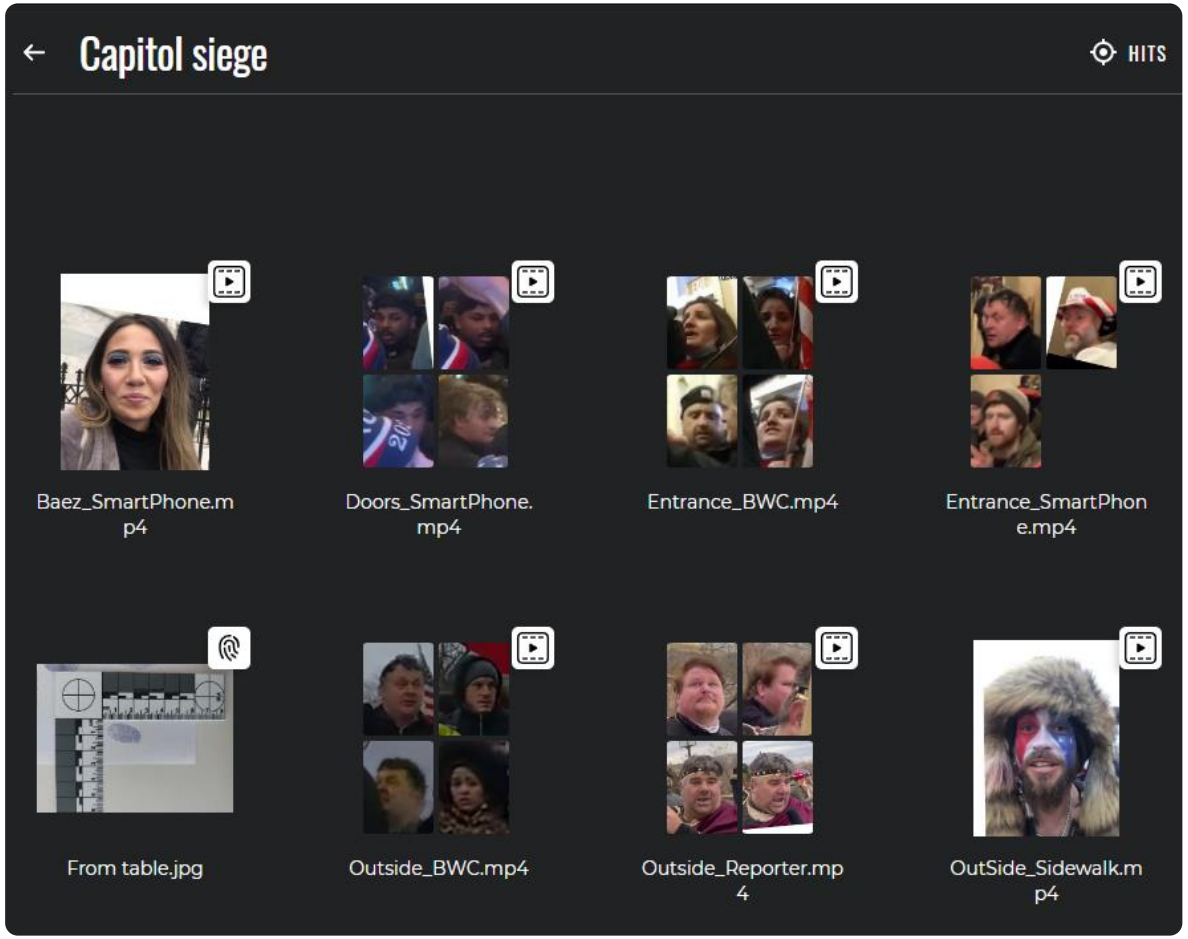


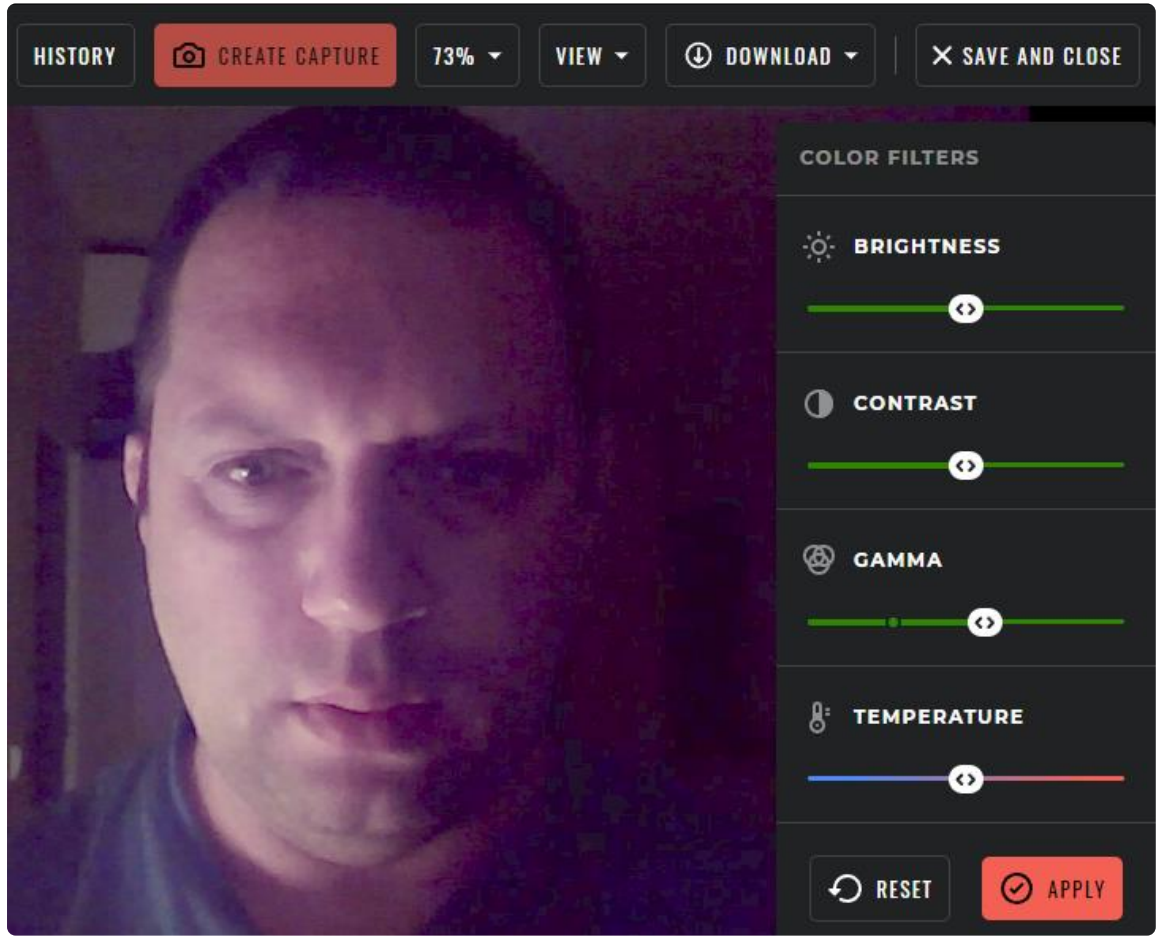
Scars, marks and tattoos

Criminal Case Management

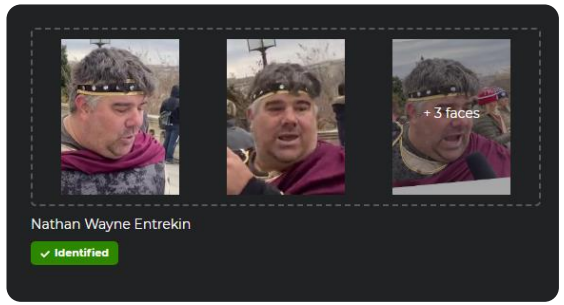


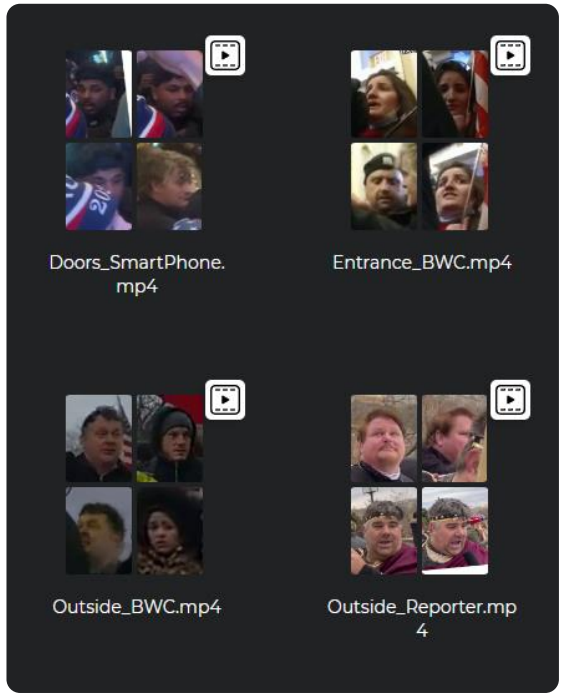
Criminal Case Management





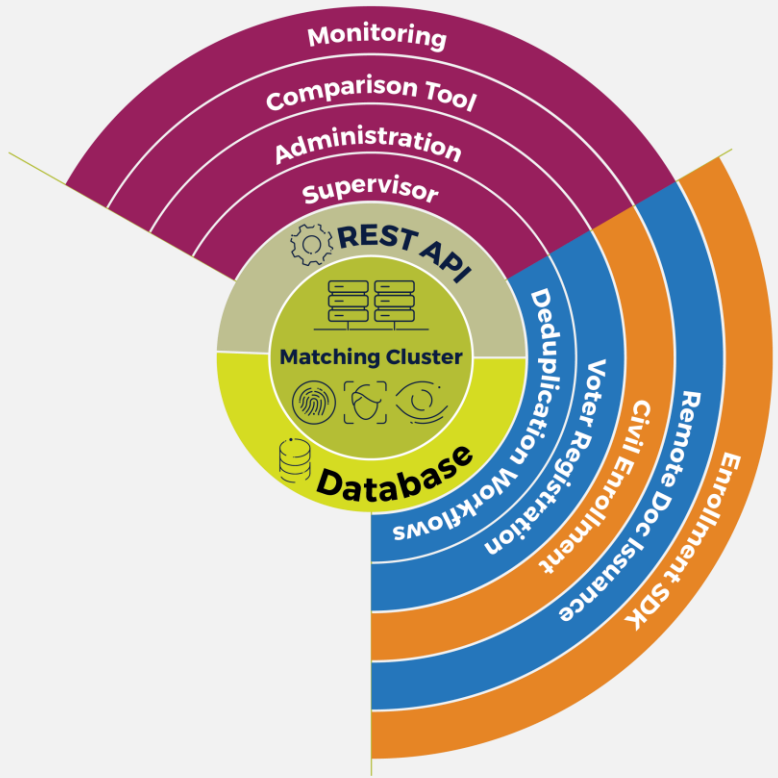
Video Investigation Module





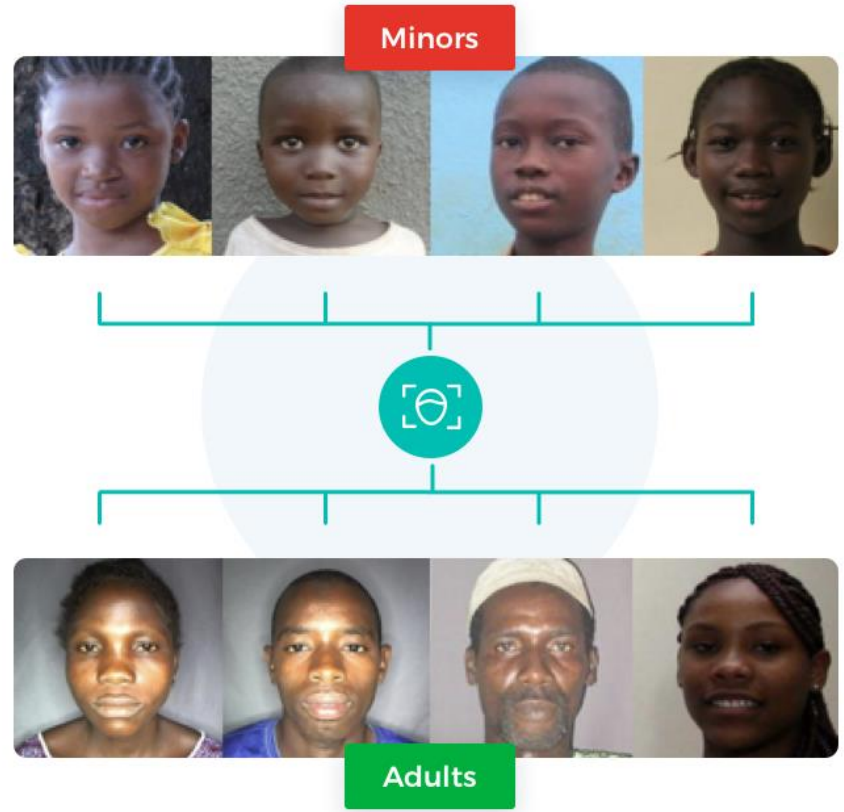
ABIS for Civil Identification

- Deduplication Workflows
- Voter Registration
- Civil Enrollment
- Remote Doc Issuance
- Enrollment SDK



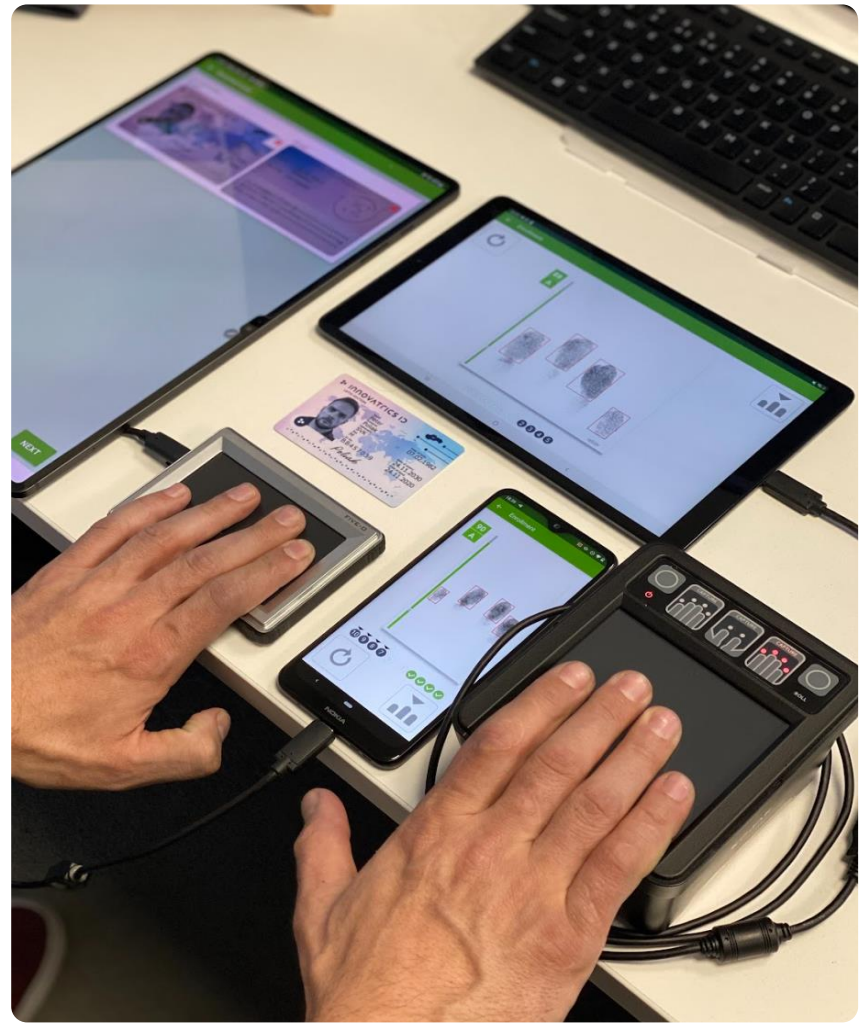
Minor Identification for Elections

- Labeled photos of minors and adults
- Tailored model for classification based on AI
- Every voter gets minor score
- Removal from register by operator based on threshold

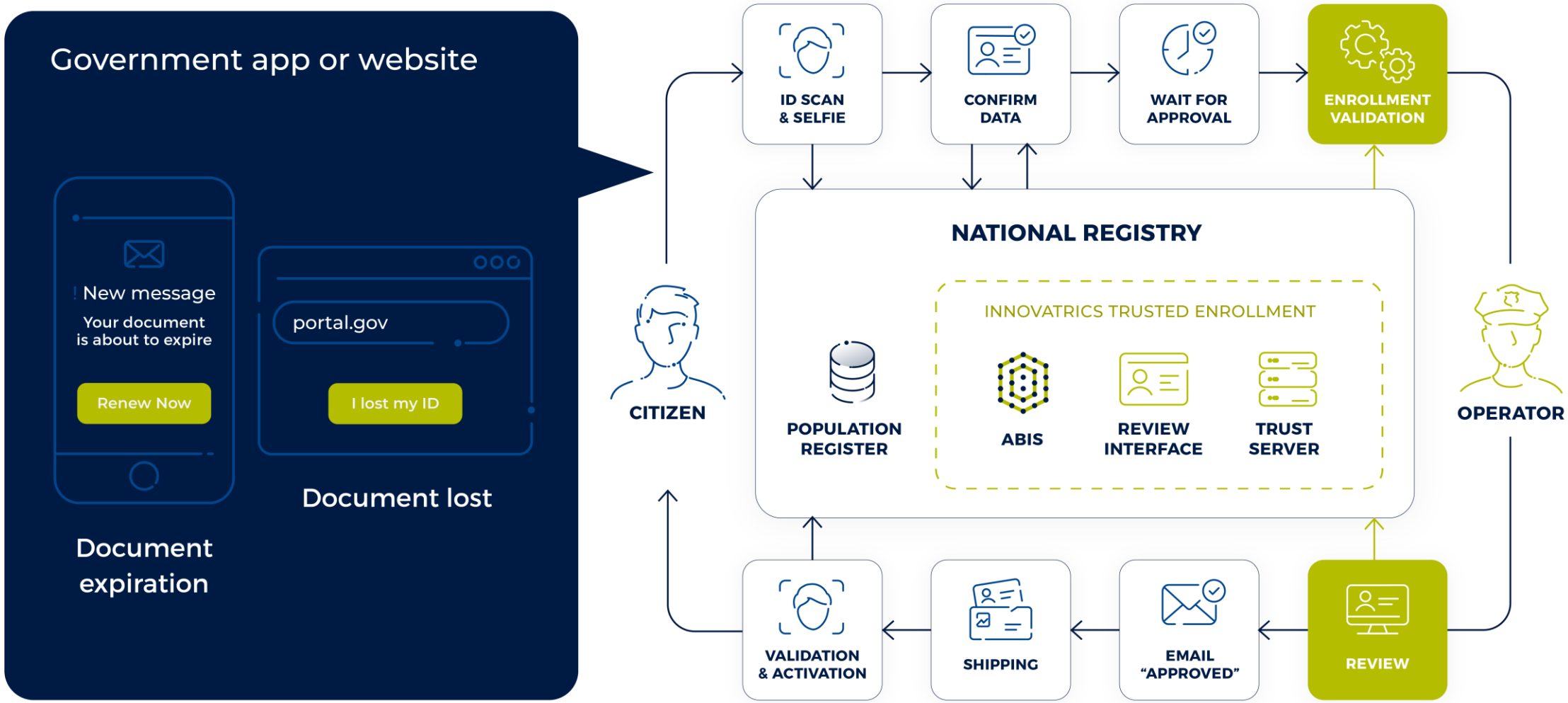


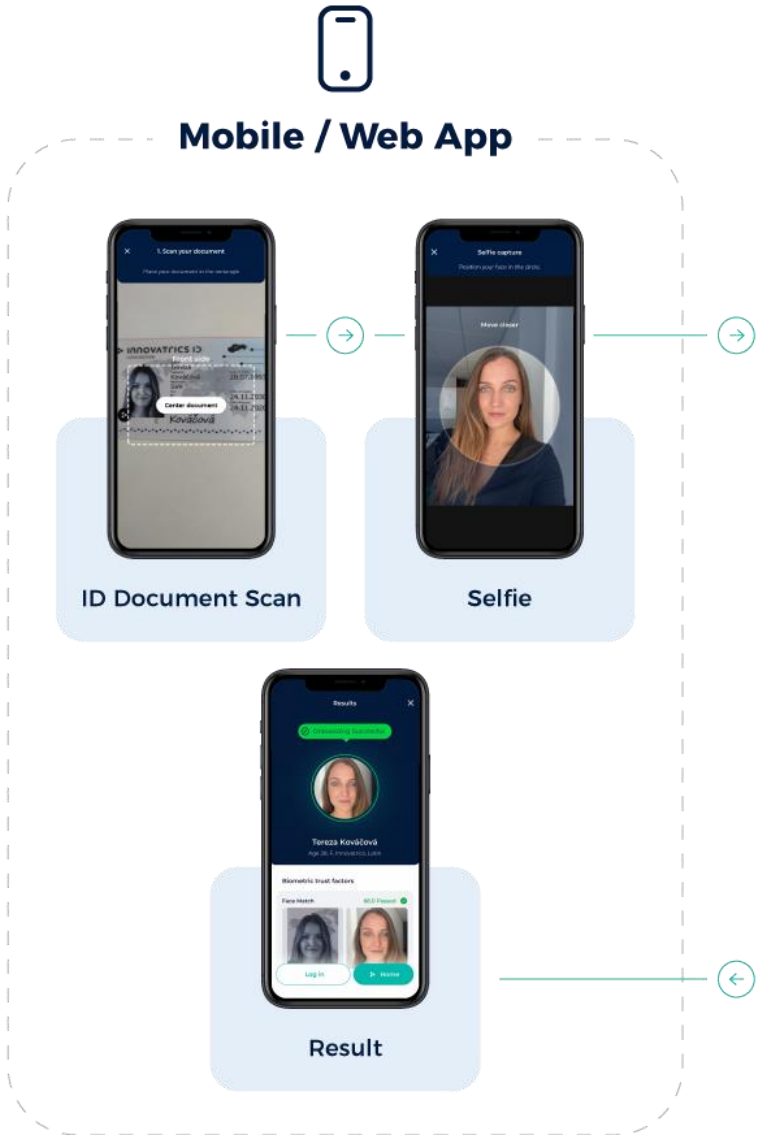
Mobile Enrollment

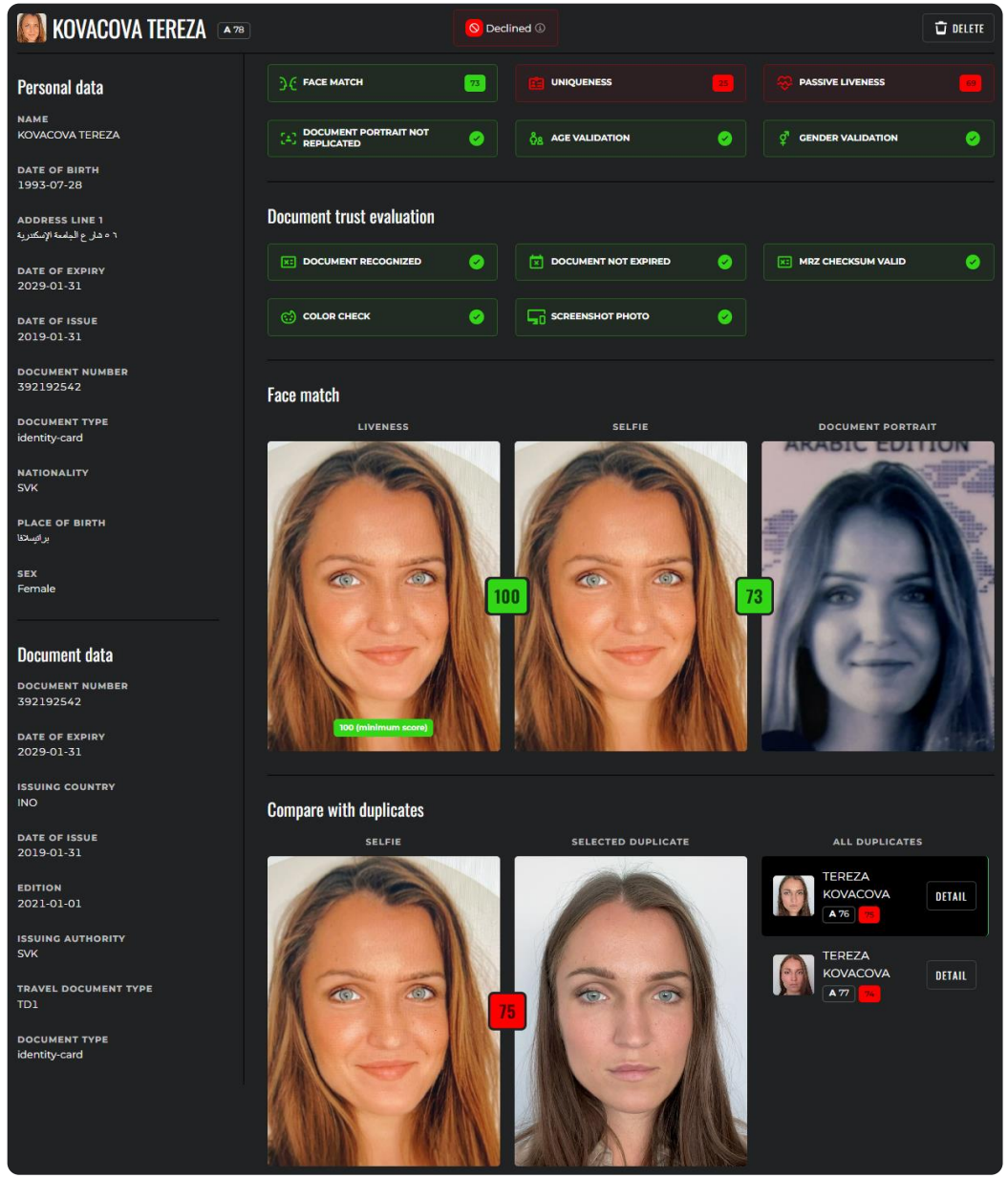
ANDROID



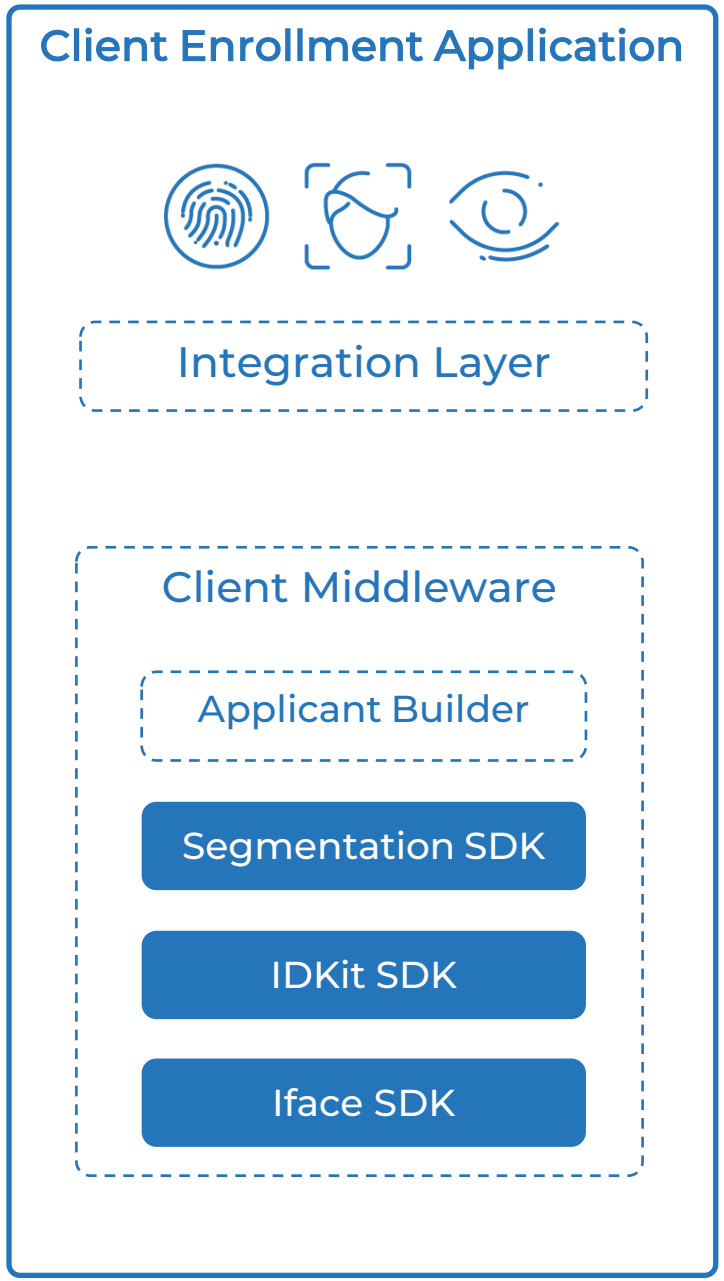
Remote Document Issuance

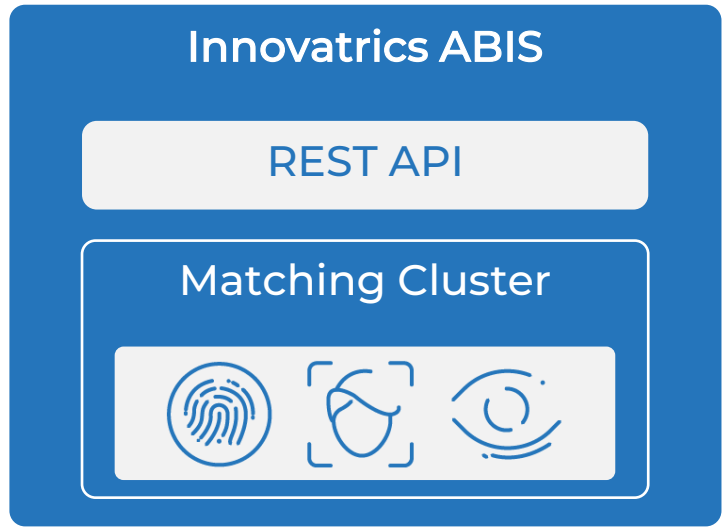



Mobile / Web App
ID Document Scan
Selfie
Result

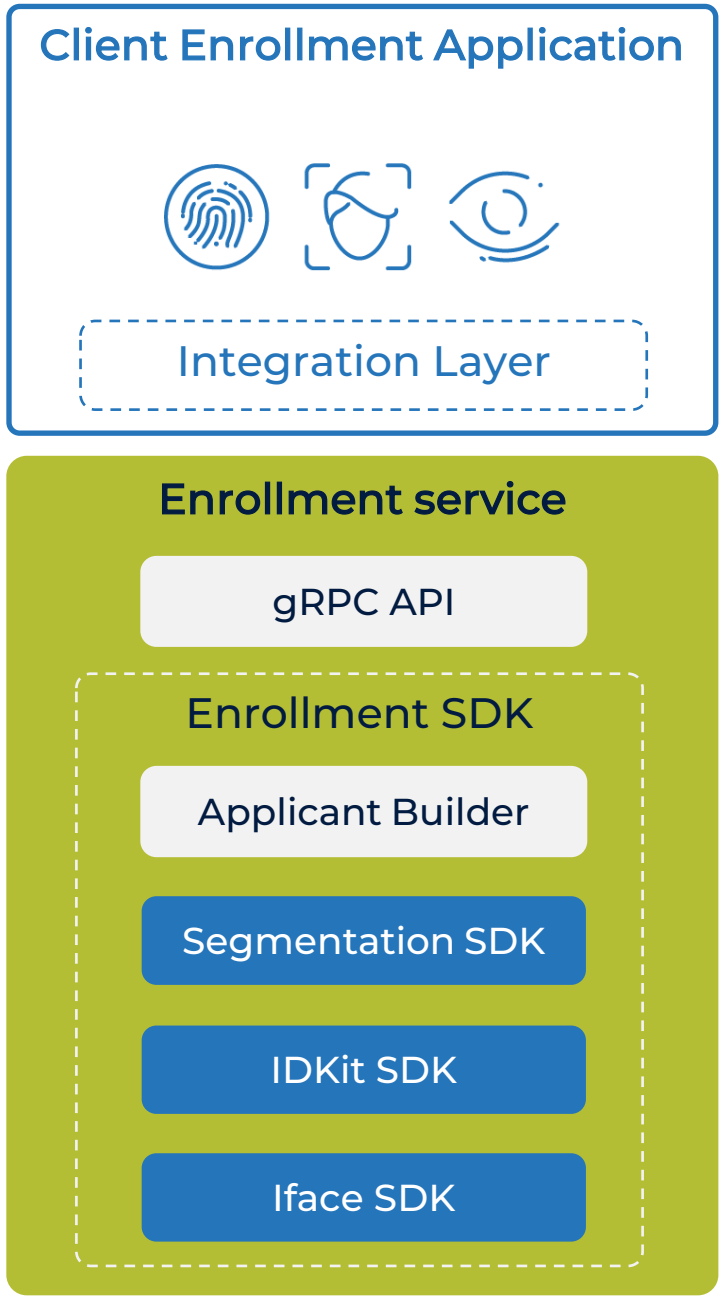

KOVACOVA TEREZA
78
Declined
DELETE
Personal data
NAME
KOVACOVA TEREZA
DATE OF BIRTH
1993-07-28
ADDRESS LINE 1
٦ ه شارع الهامة الإسكندرية
DATE OF EXPIRY
2029-01-31
DATE OF ISSUE
2019-01-31
DOCUMENT NUMBER
392192542
DOCUMENT TYPE
identity-card
NATIONALITY
SVK
PLACE OF BIRTH
براتيسلافا
SEX
Female
Document data
DOCUMENT NUMBER
392192542
DATE OF EXPIRY
2029-01-31
ISSUING COUNTRY
INO
DATE OF ISSUE
2019-01-31
EDITION
2021-01-01
ISSUING AUTHORITY
SVK
TRAVEL DOCUMENT TYPE
TD1
DOCUMENT TYPE
identity-card
FACE MATCH
73
UNIQUENESS
25
PASSIVE LIVENESS
69
DOCUMENT PORTRAIT NOT REPLICATED
AGE VALIDATION
GENDER VALIDATION
Document trust evaluation
DOCUMENT RECOGNIZED
DOCUMENT NOT EXPIRED
MRZ CHECKSUM VALID
COLOR CHECK
SCREENSHOT PHOTO
Face match
LIVENESS
SELFIE
DOCUMENT PORTRAIT
100
73
100 (minimum score)
Compare with duplicates
SELFIE
SELECTED DUPLICATE
ALL DUPLICATES
75
TEREZA KOVACOVA
76
DETAIL
TEREZA KOVACOVA
77
DETAIL

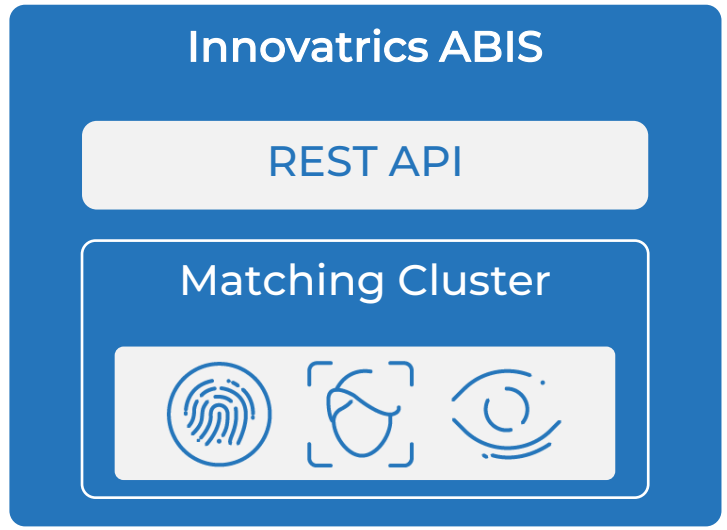
Current Enrollment SDKs





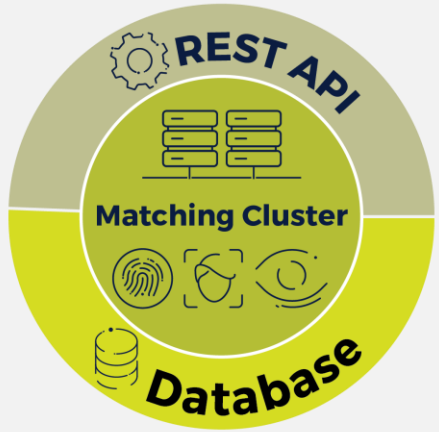
New Enrollment SDK





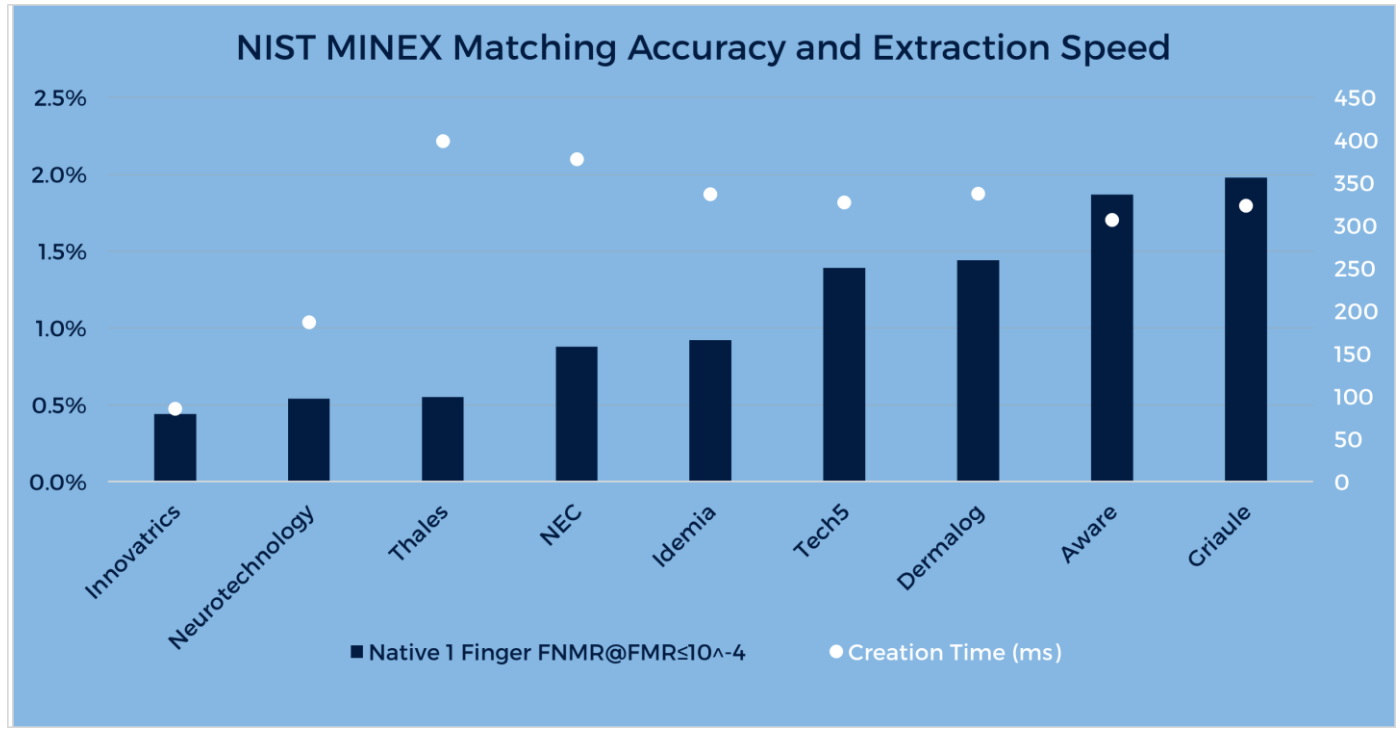
What is New Inside ABIS

- Engine
- Integration
- Architecture



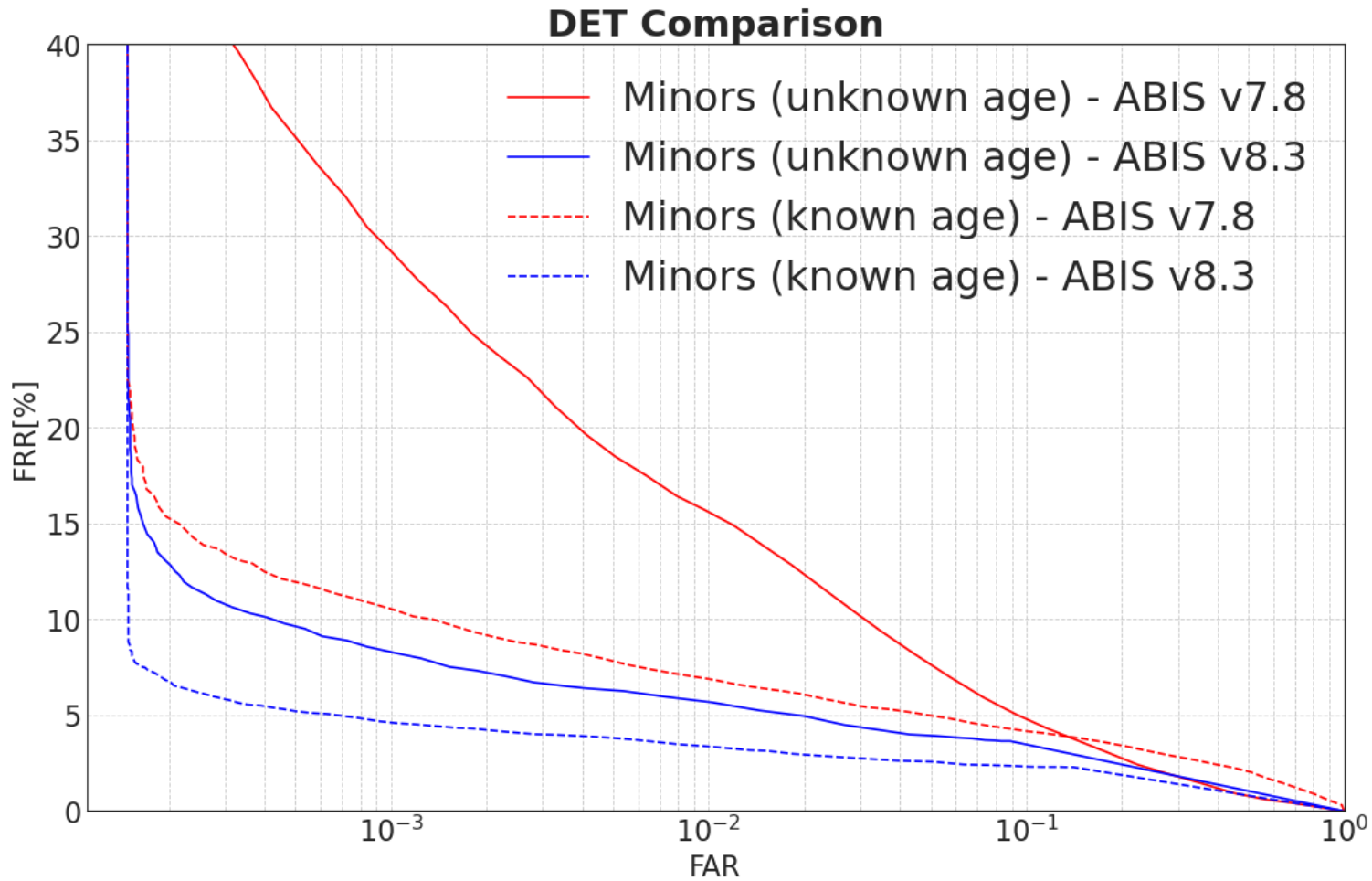
Next Generation Fingerprint Engine

- Faster and more accurate
- NIST evaluation
  - MINEX
  - PFT III – top ranked
  - ELFT is planned
- Available from ABIS 8.3



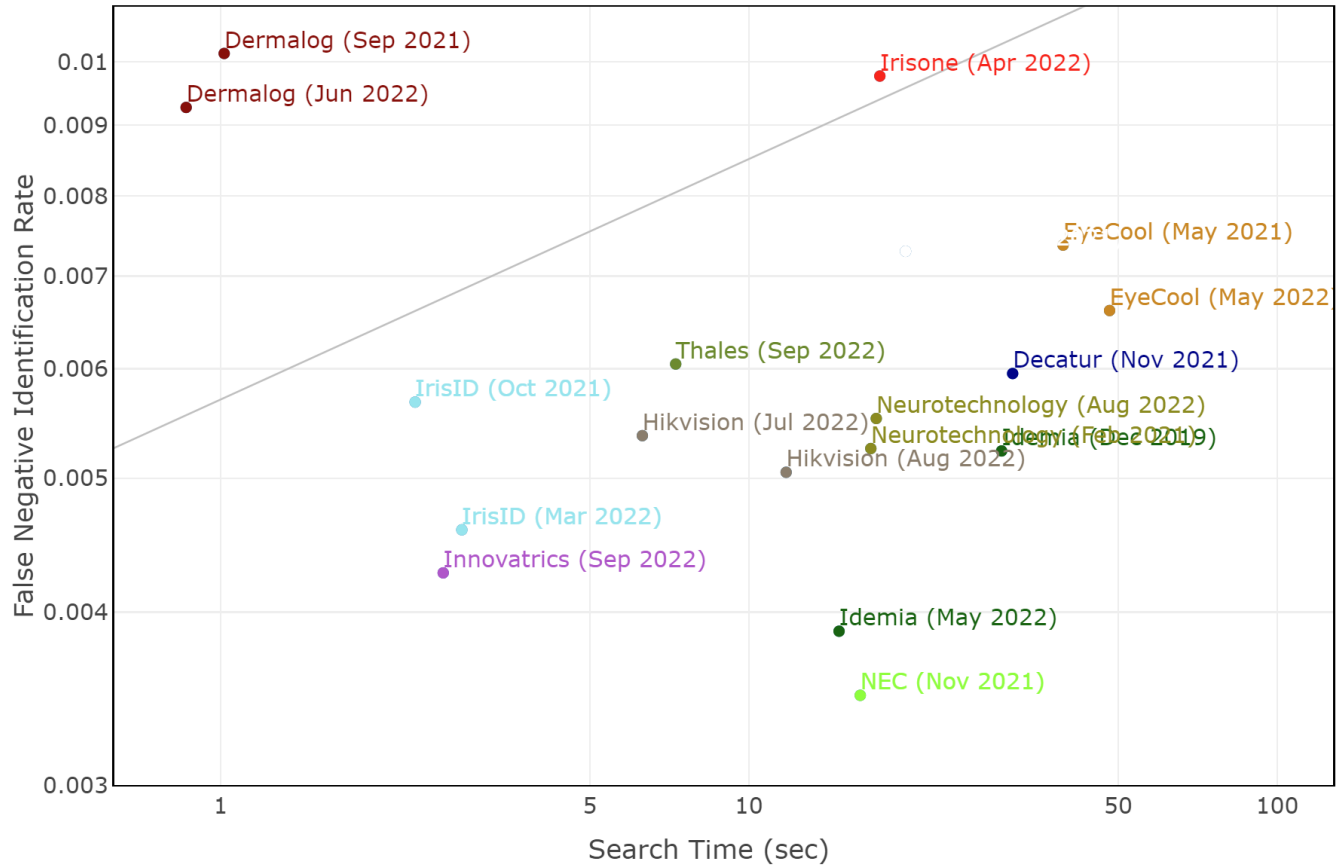
Next Generation Fingerprint Engine

- Scale invariant verification
- Real-life Application
  - Aging of children
  - Mobile vs live prints
  - Live prints vs scanned cards



New Iris Engine

- Top 3 most accurate in IREX
- 1kB template size
- <500ms extraction time
- Fastest among accurate in IREX
- 10M/s per core matching speed on real-life servers
- Next submission is planned soon



Dataset:	Operational Dataset 4th pull
Samples used:	Both eyes
Enrolled Population:	500K people
Enrollment Method:	One enrollment session per person

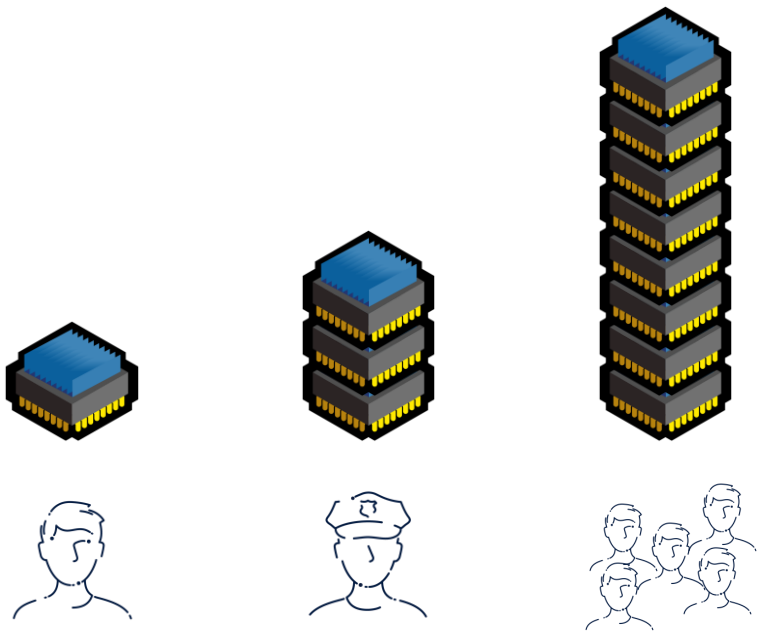
REST API

- Compact and efficient using JSON format
- Real-time application
- Robust implementation
- OpenAPI Standard
- Short learning curve

```
POST Identify
{
  "probe": {
    "format": "ICS",
    "dataBytes":
"n+KTop6GQWb95FxvqWQiDh3…"
  },
  "identificationParameters": {
    "applicantSets": [
      "civil"
    ],
    "candidatesCount": 10,
    "threshold": 50,
    "speed": 6,
    "maxRotation": 180
  }
}
```

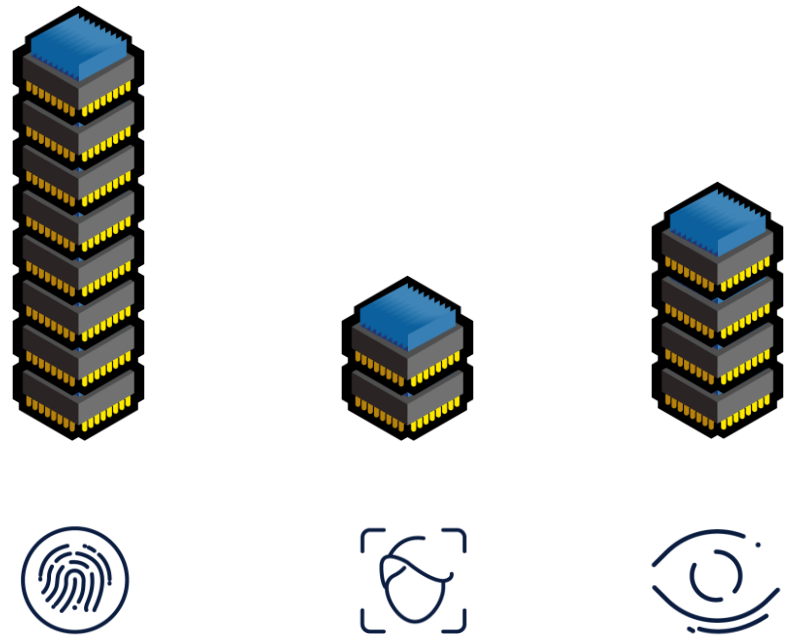
ABIS Galleries and Scalability

Resources by **gallery type**



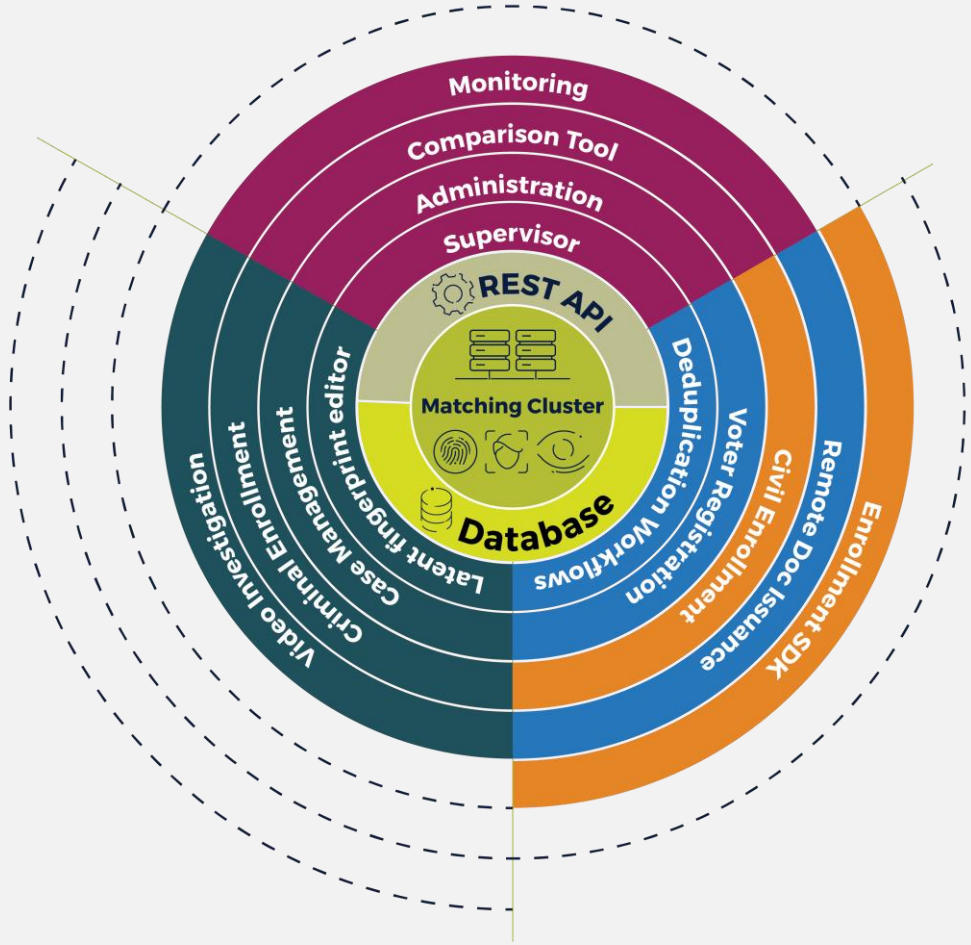
and/or

Resources by **modality type**

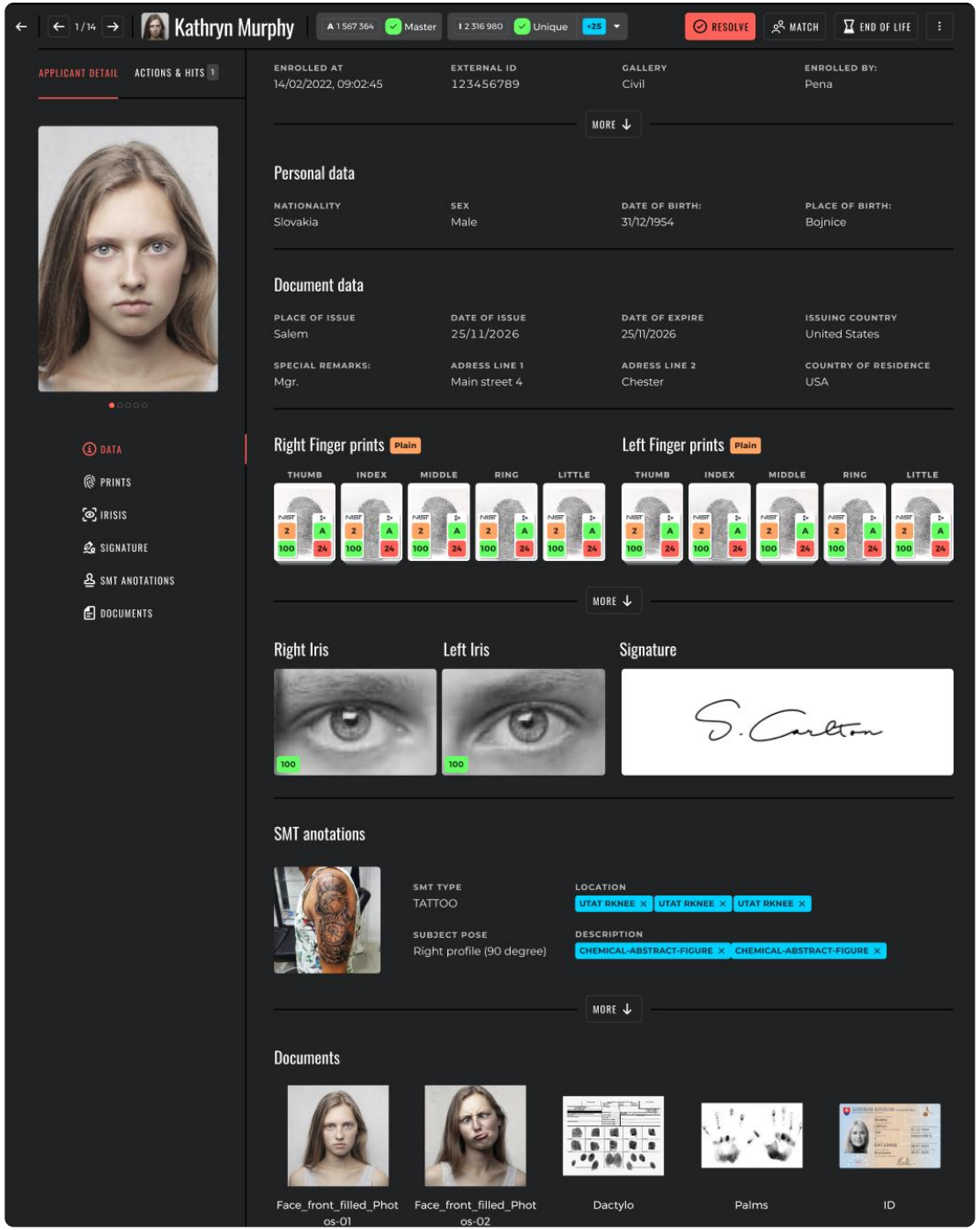


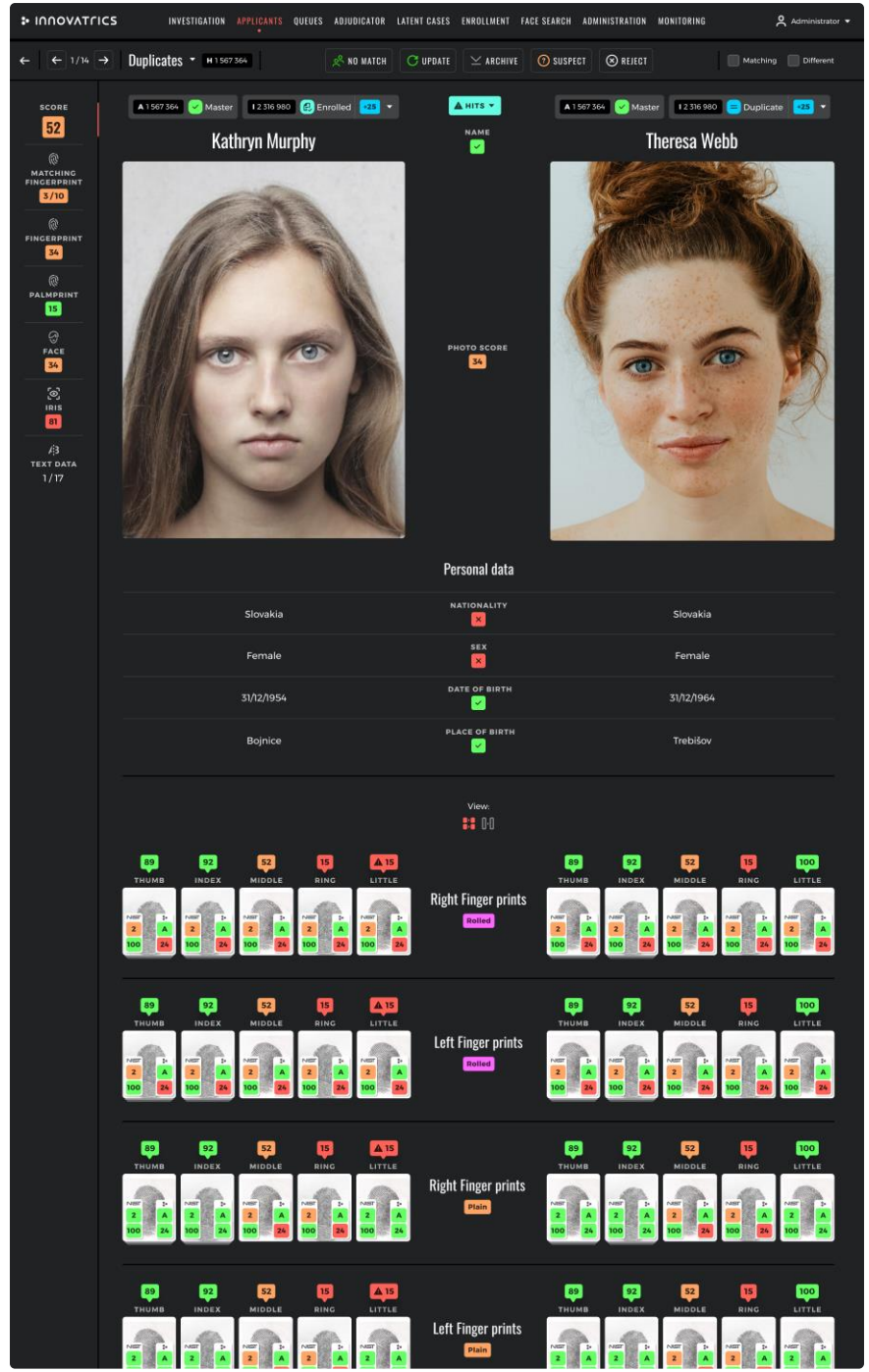
ABIS Future

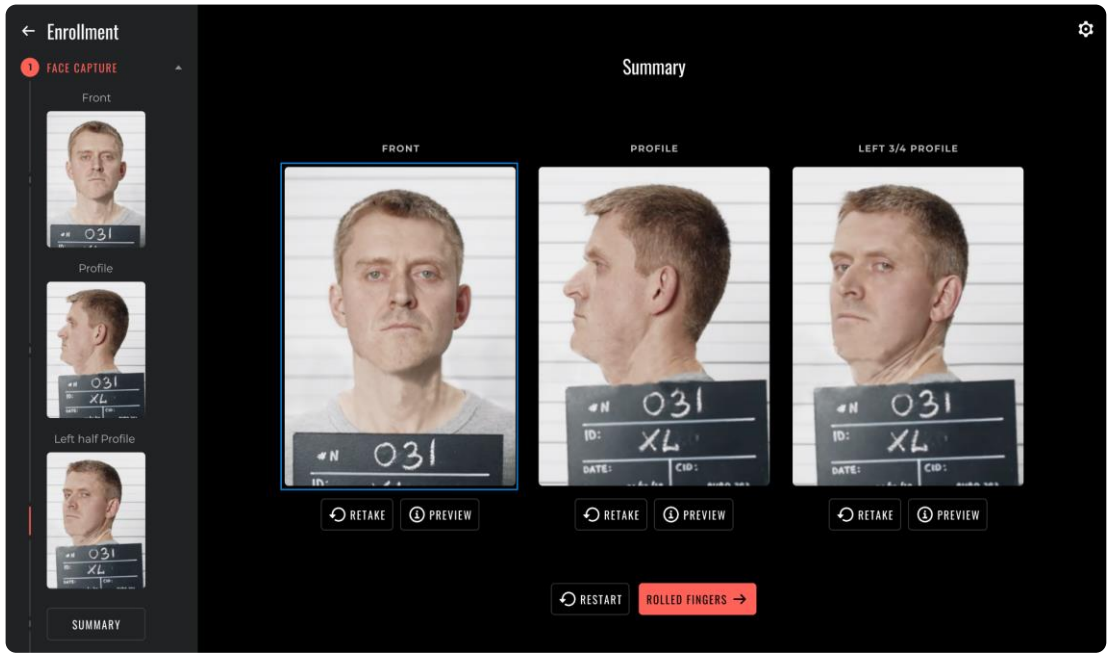
What to expect in ABIS family for 2023

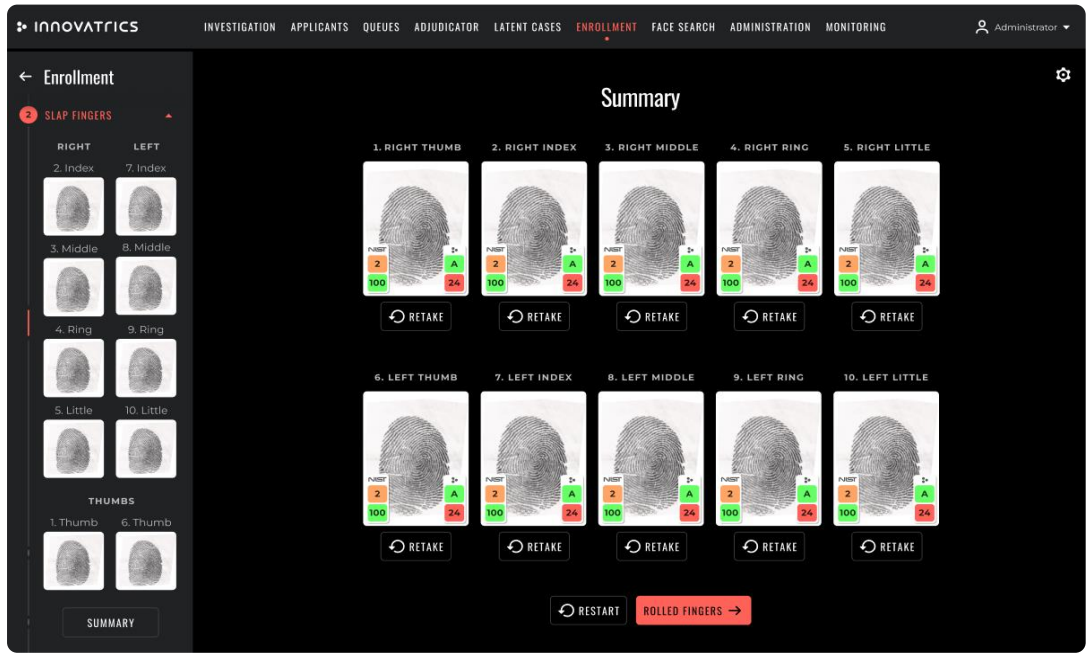


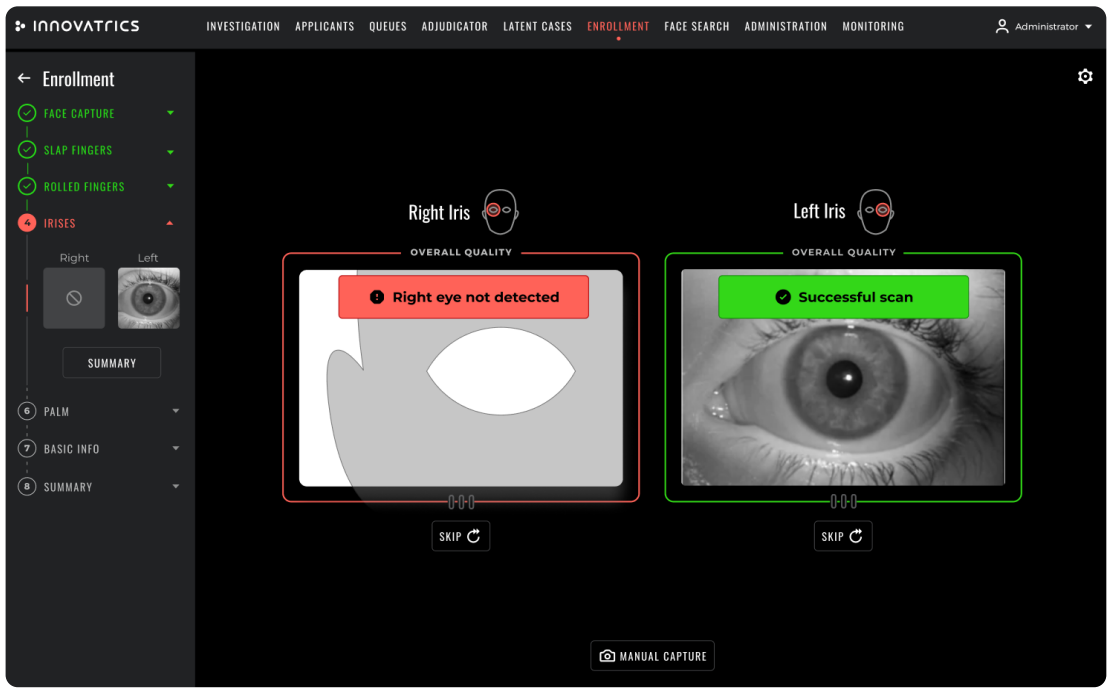
UX

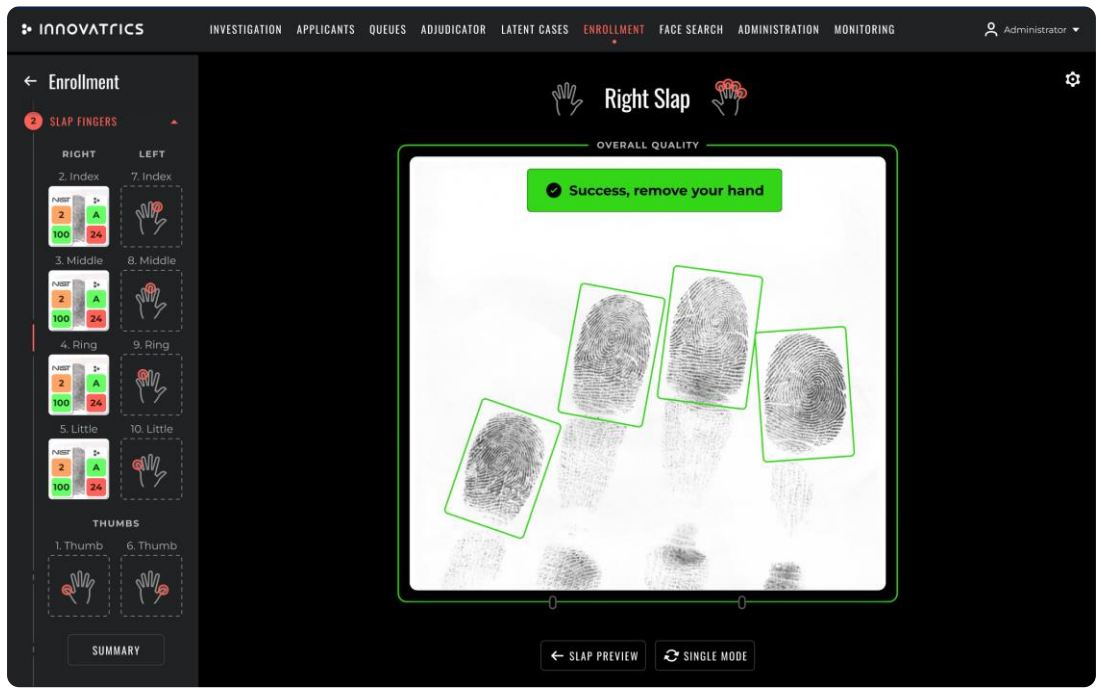

Kathryn Murphy
RESOLVE
MATCH
END OF LIFE
APPLICANT DETAIL
ACTIONS & HITS
ENROLLED AT
14/02/2022, 09:02:45
EXTERNAL ID
123456789
GALLERY
Civil
ENROLLED BY:
Pena
MORE
Personal data
NATIONALITY
Slovakia
SEX
Male
DATE OF BIRTH:
31/12/1954
PLACE OF BIRTH:
Bojnice
Document data
PLACE OF ISSUE
Salem
DATE OF ISSUE
25/11/2026
DATE OF EXPIRE
25/11/2026
ISSUING COUNTRY
United States
SPECIAL REMARKS:
Mgr.
ADRESS LINE 1
Main street 4
ADRESS LINE 2
Chester
COUNTRY OF RESIDENCE
USA
DATA
PRINTS
IRISIS
SIGNATURE
SMT ANOTATIONS
DOCUMENTS
Right Finger prints
Plain
Left Finger prints
Plain
THUMB
INDEX
MIDDLE
RING
LITTLE
Right Iris
Left Iris
Signature
SMT anotations
SMT TYPE
TATTOO
LOCATION
UTAT RKNEE
SUBJECT POSE
Right profile (90 degree)
DESCRIPTION
CHEMICAL-ABSTRACT-FIGURE
Documents
Face_front_filled_Photos-01
Face_front_filled_Photos-02
Dactylo
Palms
ID


INNOVATRICS
INVESTIGATION
APPLICANTS
QUEUES
ADJUDICATOR
LATENT CASES
ENROLLMENT
FACE SEARCH
ADMINISTRATION
MONITORING
Duplicates
NO MATCH
UPDATE
ARCHIVE
SUSPECT
REJECT
SCORE
52
Kathryn Murphy
Theresa Webb
Master
Enrolled
Duplicate
HITS
NAME
PHOTO SCORE
34
Personal data
Slovakia
Female
31/12/1954
Bojnice
Slovakia
Female
31/12/1964
Trebišov
View:
Right Finger prints
Rolled
Left Finger prints
Rolled
Right Finger prints
Plain
Left Finger prints
Plain


Enrollment
FACE CAPTURE
Front
Profile
Left half Profile
SUMMARY
Summary
FRONT
PROFILE
LEFT 3/4 PROFILE
RETAKE
PREVIEW
RESTART
ROLLED FINGERS

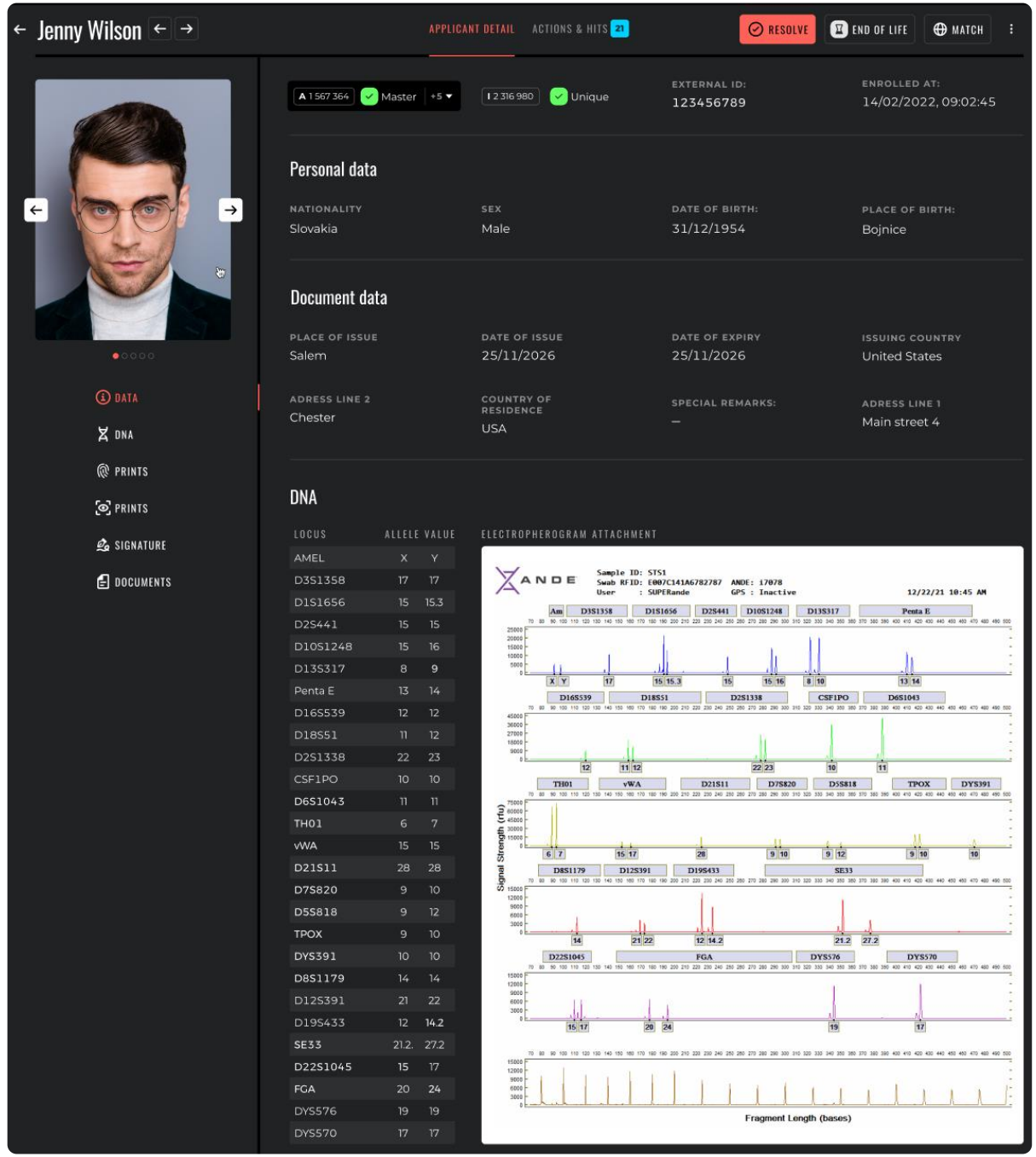

INNOVATRICS
INVESTIGATION
APPLICANTS
QUEUES
ADJUDICATOR
LATENT CASES
ENROLLMENT
FACE SEARCH
ADMINISTRATION
MONITORING
Administrator
Enrollment
SLAP FINGERS
RIGHT
LEFT
2. Index
7. Index
3. Middle
8. Middle
4. Ring
9. Ring
5. Little
10. Little
THUMBS
1. Thumb
6. Thumb
SUMMARY
Summary
1. RIGHT THUMB
2. RIGHT INDEX
3. RIGHT MIDDLE
4. RIGHT RING
5. RIGHT LITTLE
6. LEFT THUMB
7. LEFT INDEX
8. LEFT MIDDLE
9. LEFT RING
10. LEFT LITTLE
RETAKE
RESTART
ROLLED FINGERS


INNOVATRICS
INVESTIGATION
APPLICANTS
QUEUES
ADJUDICATOR
LATENT CASES
ENROLLMENT
FACE SEARCH
ADMINISTRATION
MONITORING
Administrator
Enrollment
FACE CAPTURE
SLAP FINGERS
ROLLED FINGERS
4 IRISES
Right
Left
SUMMARY
6 PALM
7 BASIC INFO
8 SUMMARY
Right Iris
Left Iris
OVERALL QUALITY
Right eye not detected
Successful scan
SKIP
MANUAL CAPTURE


INNOVATRICS
INVESTIGATION
APPLICANTS
QUEUES
ADJUDICATOR
LATENT CASES
ENROLLMENT
FACE SEARCH
ADMINISTRATION
MONITORING
Administrator
Enrollment
SLAP FINGERS
RIGHT
LEFT
2. Index
7. Index
3. Middle
8. Middle
4. Ring
9. Ring
5. Little
10. Little
THUMBS
1. Thumb
6. Thumb
SUMMARY
Right Slap
OVERALL QUALITY
Success, remove your hand
SLAP PREVIEW
SINGLE MODE

DNA

```
/abis/v2/identify/dna:
  post:
    description: Performs one-to-many identification with DNA data.
    operationId: identifyProbeDna
    parameters:
    - description: defines how detailed data will be returned
      in: query
      name: fullResponse
      required: false
      schema:
        type: boolean
    - description: X-Request-ID
      in: header
      name: X-Request-ID
      required: false
      schema:
        type: string
    requestBody:
      content:
        application/json:
          examples:
            Identify probe DNA:
              description: Identify probe by DNA data
              value:
                gallery: default
                identificationParameters:
                    galleries: ["default"]
                    candidatesCount: 2
                    threshold: 85
                    speed: 7
                    maxRotation: 180
                    anonymizeFingerCount: 2
                    lowQualityFingerprintMode: true
                BiometricDataDnaInput:
                  fullApplicantDnaModality:
                    dnas:
                    - dna:
                      dnaData:
                        dataBytes: ===base64 encoded CODIS file===
          schema:
            $ref: '#/components/schemas/IdentifyProbeDnaRequest'
    responses:
      "200":
        content:
          '*/*':
            schema:
              type: array
              items:
                $ref: '#/components/schemas/IdentificationCandidate'
        description: OK
      "400":
        content:
          '*/*':
```



INNOVATRICS

Thank you!

Questions?

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